Recently the "river park" has become one of the more significant themes of contemporary landscape culture. European examples, even when referred to as "river parks", do not necessarily have a common methodological approach but are more likely to be influenced by context and often have very little to do with river parks.
The RiverLinks approach begins with different premises, here the specific objective is clearly identified and, as in all the Interreg projects, involves shared methodology which can be experimented and applied by the participants and can also be used for many similar European situations. This requires a reference framework for the experiences being studied or already tested in Europe. This book deals with sixteen selected cases where the city-river relationship has been resolved with originality. Many famous and worthwhile examples have not been illustrated, but in our view the cases cited show how a methodical approach can be useful in implementing successful connections between the city and the river.
From these examples the six cities that gave rise to the Riverlinks project (Florence, Bremen, Dresden, Bordeaux, Seville and Tallinn) have provided useful lessons in drawing up shared operational proposals, which could serve as valid models for other European situations. With this in mind the book begins with the illustration of the city-river relationship of the six pilot cities, so that the experiences shown, including debate as well as cultural, technical and scientific comparison between these six very different European cities, though very close in their goals, can give exemplary examples of how to develop a truly excellent river-city relationship.






www.riverlinks.org

€ 20,00

ISBN 88-7970-231-9

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RiverLinks

interface d'excellence pour un rapport durable ville fleuve

INTERREG IIIC

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A SELECTION OF ADVANCE AND RIVER CITIES IN EUROPE

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RiverLinks

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INTERREG IIIC

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Pacini Editore Industrie Grafiche – Ospedaletto (Pisa)

ISBN 88-7970-231-9

Cover: Catia Lenzi

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Preface

There can be no doubt regarding the value and usefulness of the Interreg programmes whose collective results have permitted improved, progressive planning in further design projects.
This knowledge provides a foundation for the revival of avant-garde technologies.
RiverLinks explores what the main European cities have done to guarantee a better, more modern life style for their citizens, using the Interreg regulations governing river-town relationships, and illustrates experiences in improving the often neglected and frequently under-used surroundings.
The relationship with the river, particularly its naturalistic qualities, together with the ever more pressing needs of the city, seems to represent the brilliant yet obvious solution to the problem.
The contribution of RiverLinks, with its pilot experiments linked to other realities arising in similar urban situations, constitutes a small effort yielding a huge result.

RiverLinks Project
The Coordinator
Giovanni Malin

Sul valore e sull'utilità dei programmi Interreg, credo che non sussistano dubbi.
Chi ha beneficiato di questi risultati comunitari, ha trovato indubbiamente spiragli per una migliore ed approfondita programmazione delle proprie attività progettuali.
La conoscenza, quindi, come base per rilanciare le tecnologie d'avanguardia.
Anche RiverLinks si è proposto di conoscere, utilizzando l'articolato disciplinare Interreg nel rapporto città-fiume, ciò che le principali città europee hanno realizzato al fine di garantire un migliore e più moderno stile di vita ai propri cittadini.
Un contributo, quindi, di esperienza atto a riqualificare e valorizzare ciò che ci sta d'intorno, spesso dimenticato, troppo spesso sottoutilizzato.
Il rapporto con il fiume, ed in particolare i suoi valori naturalistici coniugati con le sempre più stringenti esigenze della città, rappresenta a nostro avviso il traguardo su cui puntare con decisione.
Il contributo di RiverLinks, delle sue esperienze pilota collegate a quelle di altre realtà nate in contesti cittadini similari, va proprio in questo senso.
Un piccolo sforzo, dunque, per un grande risultato!

Giovanni Malin
Coordinatore del Progetto RiverLinks

Introduction

Recently the "river park" has become one of the more significant themes of contemporary landscape culture. European examples, even when referred to as "river parks", do not necessarily have a common methodological approach but are more likely to be influenced by context and often have very little to do with river parks.

Just how different the results of these interventions can be is shown by two classic examples: Lee Valley Park and Valencia. The English solution, which served as a model for traditional river parks for many years, has certainly proved positive, but it is very much linked to the typical English relationship with rivers and the use of river corridors for touristic, commercial and recreational purposes, always in tune with nature conservation. This is possible in a country where water is never scarce and there is not even a temporary lack in the summer, and where extensive woodland and parkland abound. The other example, the experience of Riccardo Bofill in Valencia, is the negation of a river park, diametrically opposed to the former solution, partly due to different environmental conditions. It is far removed from a river park in its search for original, though hardly plausible, results and certainly not comparable with other situations.

When examining recent cases, the way in which the relationship between many European cities and their rivers has been resolved clearly shows how the more interesting examples are rarely organic plans involving the urban structure but are more likely to be limited interventions beside the river for enjoyment, experimenting with different typologies.

Different case studies and details are discussed: at Aaruhs, Denmark, the relationship with the river is the pretext for strengthening the pedestrian and cycle system in the city; at Nancy, France, the main objective is to «integrate the embankments into the urban scene, not only as technical structures but also as links between river and city»; in London, the recurring theme of the relationship with the Thames and its coexistence with the city offers a wide range of solutions according to context.

Many plans for territorial parks exist along rivers which we can call "nature reserves", undoubtedly interesting although tied to situations where naturalistic values prevail, even where the river runs through large city centres, such as the Ticino Park in Italy.

The RiverLinks approach begins with different premises to the above-mentioned experiences. Here the specific objective is clearly identified and, as in all the Interreg projects, involves shared methodology which can be experimented and applied by the participants and can also be used for many similar European situations. This requires a reference framework for the experiences being studied or already tested in Europe. This book deals with sixteen selected cases where the city-river relationship has been resolved with originality. Many famous and worthwhile examples have not been illustrated, but in our view the cases cited show how a methodical approach can be useful in implementing successful connections between the city and the river.

The information is gathered according to a prearranged scheme in order to allow easy comparison between the experiences examined. After a brief introduction to each case study the method of intervention is described, the objectives explained and the results obtained are illustrated. At the end of each report the facilities available along the river banks in the city are mentioned. This information is laid out in a final schematic summary for easy consultation.

It is obvious that the main objectives sought in each case differ according to available conditions, which can be divided into four main groups:

- The first group includes the cities which have tackled flood problems: Cologne, Regensburg, Vienna, Prague and Budapest;
- The second deals with the experiences involving the reclamation of industrial areas: Bilbao, Lisbon and Porto;

– The third contains all the interventions of landscape development for recreation purposes, giving rise to the classical river parks, as visualised in the collective imagination: Lyons confluence, Lyons Miribel and Strasbourg;
– The last group includes the proposals to revitalise historic centres through the revival of the relationship with the river, previously often ignored or neglected – Turin, Rome, Padua and Bremen – as well as the ephemeral experiences in Paris.

It is obvious that these subdivisions are used for convenience since all the cited cases contain characteristics which also belong to the other groups.

Apart from this classification into groups each example is characterised by a particular way of relating to the river.

The first group of cities which tried to tackle the flood problem shows very varied solutions: Cologne, even though it drew up a very prudent plan and constructed adequate overflow systems, «decided to use a mobile protection system to solve the problem. These water controlling elements can be mounted very quickly and dismantled after the high waters have receded. In this way the historic structure of the city remains untouched, since the locks are only present during the brief high water period». The same method has been adopted in Regensburg, even though the strategy here is based on citizen involvement in decision making. Budapest and Vienna have in common the fact that they are crossed by the same river and have both signed the "Convention for the protection of the Danube", even if the solutions are different. The studies conducted in Prague are interesting for the mathematical models used to simulate floods.

The most incisive and striking interventions are those in which industrial areas have been restored along river banks creating high quality urban landscapes, often designed by famous architects (such as Hargreaves in Lisbon). Bilbao, Porto and Lisbon have invested heavily in these areas and have redefined the city-river relationship, where the memory of past industrial activities is only fleeting thanks to a few surviving traces restored by the designers.

The creation of recreational river parks in Lyons (Confluence and Miribel) and Strasbourg provide an important experimental base where the designers have come up with different solutions. Lyons Mirabel has four main objectives: to preserve the drinking water supply, restore the overflow basin, protect natural resources and to develop open-air activities. Lyons "Confluence" furthers the attempt to adapt the solution to the natural site conformation, a special space with evocative shapes in the confluence of the rivers. The Strasbourg Park follows a similar trend, where a pedestrian bridge is used to connect Germany and France in an area with very little personality, a disused tip, which becomes a special space in contact with nature.

The common denominator in the last four cases, grouped under the title of convenience "experiences in reviving historic centres", is the process which takes the critical environmental and ecological situation into account, using urban ecology and landscape methods and instruments. A programmed plan of construction was devised for Turin's open spaces on a territorial scale; in Rome upgrading interventions in the city and the urban landscape were chosen; in Padua the restoration of the organic system of urban and suburban surface waters resuscitated the old canals; in Bremen a new area dedicated to cooking and marine activities was created with great success. In Paris the idea of creating temporary beaches along the Seine was very successful with the public, even though it had its critics.

From these examples the six cities that gave rise to the RiverLinks project (Florence, Bordeaux, Bremen, Dresden, Seville and Tallin) have provided useful lessons in drawing up shared operational proposals, which could serve as valid models for other European situations. With this in mind the book begins with the illustration of the city-river relationship of the six pilot cities, so that the experiences shown, including debate as well as cultural, technical and scientific comparison between these six very different European cities, though very close in their goals, can give exemplary examples of how to develop a truly excellent river-city relationship.

Biagio Guccione

Partners

Bordeaux
Bremen
Dresden
Firenze
Sevilla
Tallinn

Bordeaux

Bordeaux wishes to develop natural wealth, landscape and relevant sites and wants to promote alternative means of transport to replace cars (river shuttles, bicycles tracks, pedestrian paths) including a pilot infrastructure of footpaths along the river.

The territory under examination is included within the metropolitan plain of the river Garonne. The representation will develop along the banks within the city for the realization of access and walkways.

Realisation of walkways along the river

I. Presentation of the Garonne project

- Greater Bordeaux - federal authority tender offer for conglomeration with multiple partners
- The joint wish of twelve municipalities along the Garonne and the Dordogne on the area of the urban community of bordeaux

The *Garonne Project* was started in 1997, adopted by the Community Council on 29/06/2000 and relaunched by the Community Council on 29/09/2003.

Opportunities

- *Based on the diagnostics established by the town planning agency after inquiries within the municipalities lead by the Community*
- After identification of the tender for preservation, rehabilitation and development of the river territory of the Bordeaux conglomerate

The *Garonne Project* is taken into account with reference to the conglomeration Contract Agreement 2000-2006 signed on 23/12/2000 based on certain aspects:

Axis 1: International Rayonnement of the greater Bordeaux
Action 121.3: reclaiming of abandoned industrial and port sites to favour the implementation of wealth producing activities: sites of the tidal Basin

Axis 2: valorising natural spaces
Action 232: Garonne Project

Through a scheme of fundamental evolution orientation

- Objectives for the protection, rehabilitation and development
- An initial partners' action plan

II. Realisation of walkways along the river

Opportunities

- Giving dynamism back to the territories along the river
- Valorising the natural patrimony, landscaping remarkable sites
- Developing alternative means of transport, other than cars (inter-modality, shuttle boats, bicycles, pedestrians…)

Objectives

- To develop access along the river and to link natural spaces of common interest
- To favour continuity and comfort of transport along the river

Means

- Constituting a common reference scheme coherent with other territorial projects
- Identifying community poles of interest: patrimony and remarkable sites, natural spaces

Study

- End of 2003
- Analysing the territory with regard to the interest of walkways in relation to different criteria, such as signals, safety, river tourism and landscape diversity

Preliminary

- Obtaining an agreement between managing organisations or owners of the territory concerned

Work

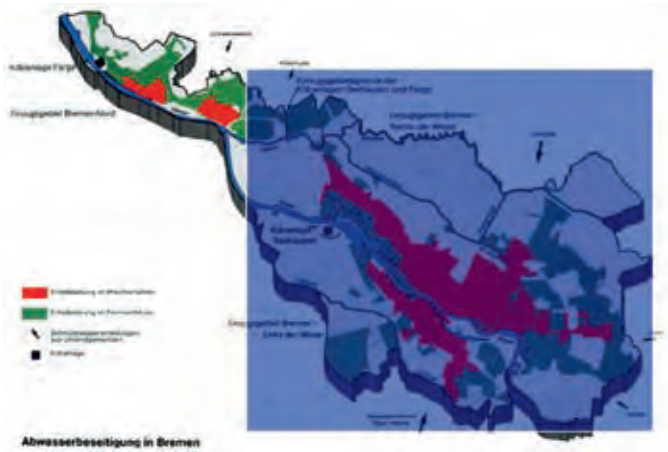
- Beginning of 2004
- The restructuring of the riverbank
- An initial portion of work is forecast over a period of 3 years

Bremen

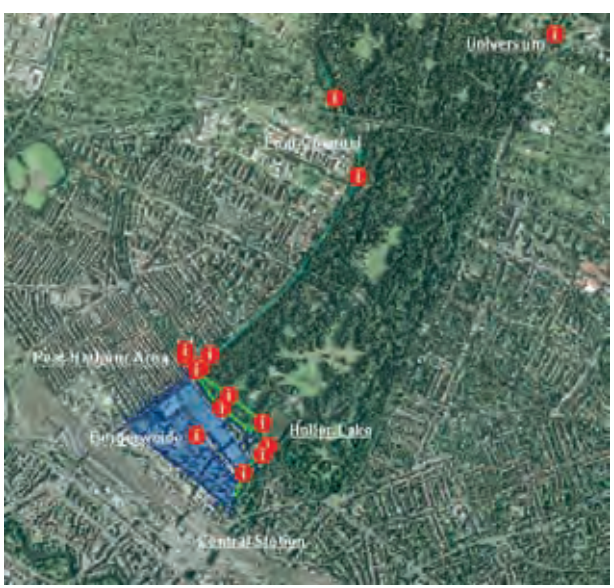
Bremen proposes to exploit the port canal for transporting peat from the countryside. The activities planned require the treatment of water, the settling of the dock, the implementation of trade and social activities, a shuttle to link the University with the Congress centre, a link with the Buerger park and the realization of the pilot structure for improving the canal water.
1 km from the city centre within the Weser basin. The representation concerns the old peat port for treatment purposes, the development of social and recreational activities.

Introduction

Bremen in Germany is one of the major harbour cities in Europe just 65 km from the North Sea. Bremen is one of the oldest city states in Europe. The city was a member of the Hanseatic League, the political and commercial league of German towns. Today Bremen has 540.000 inhabitants and has 2 universities and one high school. It has strong car manufacturing, air- and aerospace industries and many companies in the food sector including Becks, Kellogs, Kraft Foods, Tchibo etc.
After the severe damage of the Second World War people had turned their backs on the river Weser and regarded it as a canal useful only for the transportation of goods to the harbour so they settled on the edge of the city. Since then opinion has changed a lot and people have returned to the city. Today houses with a view on to the Weser are very popular.
The river Weser drains into the German Bight. The catchment area extends over 44,000 km2 between the German Central Highlands and the North Sea coast. The climate is dominated by the Atlantic influence, the average discharge of the Weser amounts to 320 m^3 s-1 with high discharge (up to 1000 to 2000 m^3 s-1) in February and March, and low discharge (below 100 m^3 s-1) in August and September. As a result of several deepening measures, mainly of the inner estuary for shipping purposes, the tidal range increases to about 4.2 m in Bremen.



The federal state of Bremen is threatened by two types of high water. One is a prediction of an increasing frequency of storm tides from the North Sea and the other consists in the high waters from the upper and middle Weser, so-called interior high waters. High water comparable with that of the river Elbe in summer 2002 only threatens the dykes of the city of Bremen from the upper and middle Weser to the middle of the city. Downstream the river is able to drain all the expected interior high water due to the mentioned extension measures for shipping purposes. The coastline is protected by dykes which prevent tidal and storm-surge flooding of the lowlands.



The sewage system in Bremen

The sewer net of the city of Bremen consists of two different systems: The combined water system and separated sewage system.
Domestic, commercial and industrial waste water is drained off within the combined water system together with the rain water in one sewage system.
With heavy rain the runoff can amount to a hundredfold of the waste water. If the complete amount of the sewer water cannot be pumped to the local urban treatment plant so-called emergency overflows become active, pumping part of the combined water into the waters. The figure shows the situation in Bremen before the redevelopment in 1986.

Water management

To improve the water quality of the polluted systems the Ministry of building, environment and traffic has been making an effort to minimize the discharge of rain water into the public combined water sewage system. Related to these measures a change in the water act of Bremen had to be made (priority of non-central rain water removal in private areas) and an examination whereby public areas with rain water could be separated from the combined water sewage system. These measures included an improvement of the purification of the municipal waste water plant Bremen-Seehausen, because the treatment of the diluted waste water as a consequence of heavy rain falls reduces its efficiency.

The project

The area of the RiverLinks Project is an old peat harbour at the end of the peat canal, that links the harbour to the rivers Wuemme, Lesum and Weser. It is only 2.500 m from the city center and 1.000 m from the main railway station. It is next to the famous Buerger Parc, to the Trade Fair Halls with the Convention Centre and some of Bremen's best hotels.
In former times the peat canal was a very important transport system to bring heating material – the peat from the countryside of the Devils Moore Region into the city. There have been 30.000 boat landings a year and 80 % of the households in Bremen were heated with peat.
With the advent of oil and gas the peat trade declined. Finally the harbour was closed and now it is only 20 % of the original harbour size. The other parts were filled with soil and are used now for a street market 3 times a week, a small park and a youth centre.
Today the harbour is used as a reservoir for special heavy rainfalls when the pipes of the mixed use waste water system are not enough to bring the rain floods out of the city. The water that comes out of that special overflow is very dirty and kills almost all the fish in the harbour.
Bremen would like to improve the water quality and to reopen the harbour for public use for boating and fishing. There are plans for a Peat Info Centre about the history of peat and water management in the city. It would be combined with a cafe/restaurant and a beer garden next to the harbour (with private investment). We want to plan and construct the pipe system to collect the rain water from the large rooves of the Fair halls opposite the harbour to send the fresh water into the Peat Harbour across a major traffic crossing. To demonstrate this first pilot project in Bremen we want to install the new Water Info Center next to the harbour (especially for school children).

Dresden

Dresden proposed its expertise on strategic plans, the Dresden Program for the improvement of retention and streamflow conditions (i.e. a ban of new urban development in flood-prone areas) and flood protection of the inner city and other highly endangered city districts (i.e. by temporary or/and stationary flood walls) in the Program plans for different water systems carried out by different authorities have to fit together.
The territory concerned is the urban basin of the rivers Elba and Weisseritz and the representation develops in the territory that was flooded in 2002.

The August 2002 flood disaster in Dresden

Some information

- Population: 470.000 inhabitants
- Total area: 328 km^2
- Highest point: 383 m a.s.l.
- Lowest point: 101 m a.s.l.
- With 63 per cent of its area devoted to woods and open spaces, Dresden can be considered one of the greenest cities in Europe
- Flood meadows along the river Elbe covering 1,510 ha

Four flood events in Dresden

- 12.08. Flood caused by the brooks
- 13.08. Flooding in the city centre and main station by the river Weisseritz, causing heavy destruction and death
- 14.08. to 22.08. Flood of river Elbe
- since 16.08.2002 Flood of groundwater (4 m more than the highest ground water level ever measured)

Weak points in the Dresden water system

- Errors in the design of the riverbeds
- Obstacles to the streamflow
- Cross- and parallel streams
- Failure of the forecast scheme
- Defects in dykes and riverbeds

Building development in flood-prone areas

First flood: the areas flooded by Dresden brooks
Second flood: the flooded area of the river Weisseritz
Third flood: the flooded area of the river Elbe
Fourth flood: extensive increase of ground water level

Dresden program for the improvement of flood protection

Decrease in volume of damage

- Reduction in / Restriction of the potential damage (e.g. rectriction of development in areas endangered by flood, master planning)
- Reduction in / Restriction of the risk of damage (e.g improvemet of retention or water-carrying capacity, improvement in flood forecasting and defence, long term: climatic change program)

Water system of brooks

- Repair work immediately
- Permanent maintenance
- Keep open the banks by law
- Watershed management in accordance with natural conditions
- Removal of illegal buildings near rivers / in rivers

Realization of the river development planning

Weisseritz

- Repair work of the riverbed immediately
- Protection of the main station and the city centre
- Extension of the existing riverbed
- Enlargement of existing bridges
- Improvement of retention and streamflow conditions
- Guarantee of emergency spillway in the course of the historical riverbed of Weisseritz

Elbe

- Improvement of retention and streamflow conditions
- Construction and improvement of dykes
- Ban of new development in flood-prone areas
- Flood protection of the city and the Friedrichstadt quarter by temporary flood walls
- Improvement of flood forecasting and warning

Groundwater

- Definition of new standard groundwater levels for important buildings
- Protection of buildings against buoyancy mainly by passive measures (controlled basement flooding)
- Protection of historical buildings by drainage of groundwater

Intersections to

- Flood protection planning for sewage plants and systems
- Plan of flood disaster management
- Flood protection planning for the rivers Elbe and Weisseritz by the authorities of the Free State of Saxony
- Special flood protection for important public buildings

Firenze

Notes on urban history

Up to the Renaissance, the area currently occupied by the Parco delle Cascine used to be an area covered by thick vegetation interrupted only by small water courses, ponds and swampy areas. The river Arno had a much larger area at its disposal than it has today, wandering and creating various branches and islets of different dimensions.

The Parco delle Cascine,in its present form, is on one of these small islands, hence the toponym Cascine dell'Isola (Island Farms), and has undergone numerous changes in the course of history due to flood deposits. In 1563, the Fosso Macinante (Milling Ditch) was built, and immediately afterwards, the two streams Mugnone and Terzolle were embanked.
For a long time, the Cascine remained an estate for the exclusive use of the Medici, for picnics and hunting, conveniently near the Pitti Palace.
On the 3rd of July 1791, the park was inaugurated and opened to the public, with great celebrations that went on for three days, depicted in several paintings. This date also coincides with the settlement by Ferdinando III, who became the Grand Duke of Tuscany when he replaced Pietro Leopoldo, who had just become the Emperor of Austria.
Nevertheless, under Ferdinando III, the Cascine were rarely opened to the public, and only on special dates, such as Ascension Day. It was only with the Napoleonic administration that regular use by the public started, thanks to Elisa, Napoleon's sister, who concentrated her official celebrations in the Parco delle Cascine. Over the following years, the Cascine witnessed several events: in 1861, great celebrations were organised for the Universal Exhibition; during the years when Florence was the capital of Italy (1865-1870), the park was used as a stage for all official presentations, parades and other gatherings.

Promenade in viale A. Lincoln (end of the nineteenth century)

The contemporary relationship between the park and the river

It is a well known fact that today there are currently several conflicts characterising the Parco delle Cascine due to the role that this park has played in the course of time, with the ever increasing weight of a growing city that found no corresponding development of a green areas system with an even spatial and typologi-

Viale della Regina (end of the nineteenth century)

cal distribution, as well as for the connections and the extension of the areas that make it up. The inspections carried out during preliminary surveys for defining the project have confirmed the importance and the differentiation of recreational uses that concern the park on a daily basis. The most common uses are strolling, cycling, resting and basic sporting activities, such as jogging and skating.
The presence of the river means that the area covered by the project, contained between the right riverbank and Viale Washington delimiting the park, offers on a particular interest by expressing a peculiar recreational potential in the urban landscape.
This type of recreational usage concerns all riverbank areas with any access provided by service ramps or river side stairs that have been recently built in wood and earth between the weir at Isolotto and the Vittoria Bridge.
The small earth beach on the right hydrographic side, immediately downstream from the weir, emerges when the water level is low, thus making it possible to actually walk to the centre of the riverbed. There are visual opportunities that are very peculiar here: of the riverbed itself, and of the front of the park lined with trees, in visual and acoustic isolation. This spot is the only widening of the bank section along the entire stretch and is frequented during sunny and warm days in spite of the relatives degraded conditions of the river, thanks to the connection to the park.
This is subject to hydraulic maintenance interventions that can be integrated with solutions and reviews with appropriate schedules aimed at improving the quality of the river ecosystem and semiology, which is also a benefit for the abovementioned recreational potential.

Views of the river Arno in the Parco delle Cascine area

Sevilla

Seville proposes the "Cordales" site to integrate compatible public activities with the river environment and the re-forestation.

The riverlinks project in Seville

The Riverlinks Project is developed on the right bank of the historical course of the river Guadalquivir in the area of the stretch flowing under the Betis and Juan Sebastián Elcano roads, for approximatly 1.500 meters. It concerns a section of the river course with great natural value that offers multiple possibilities for the environment, tourism and for tertiary development.
The neighbourhoods of Triana and of Remedios are delimited by the two existing paths drawn by the course of the river: the historical basin and the "living" course through Triana and La Cartuja.
This sector forms a strategic enclave in the organisation of the existing urban conglomeration, thanks to its situation between the historic centre and the limit of the municipal boundary that is adjacent to the "del Aljarafe" border. It also represents an important part of town, as it extends over an area of approximately 1.900 HA, around 15% of the area within municipal boundaries, with over 80.000 residents that are approximately a 10th of the population of Seville.
The current tendency to recuperate the riverbeds for public use exerts undeniable pressure on this territory, as it is considered a strategic point for its evolution

within the centre of the town. Therefore, any urban pressure stems from the necessity to make the riverbanks that are at present occupied by previous constructions accessible, and to renovate those already open to the public.
At present, the target for the right bank of the Guadalquivir coinciding with the path of the road Betis is solved with different interventions that propose a disparity of treatments, in particular:
An initial section, occupied by the "zapata del malecón" (skate of the madman), a retaining wall of the river, and those originally called "Muelles de los Tacones", which are identified with the treatment of hard bank surfaces.
A second section corresponding to the old Port de "Camaroneros", where the progressive abandonment of activities has permitted the growth of vegetation, which now characterises this bank with a natural profusion of plants and trees.
The final stretch of this section, situated at the head of the "San Telmo" Bridge, is currently allocated to hotel activities, with abundant vegetation only accessible after construction.

Seville Port

Finally, the Port of Seville, the only internal port in Spain. This year, work will start for the definite transformation of this industrial space to multiply its possibilities. This work is considered the "key" for the adaptation of the Port to its current needs, resulting from a greater volume of business. Not in vain, 2003 concluded for the Port of Seville as another year registering a movement of merchandise and a growth of over 5% greater than the previous year. At this moment, a century after having been well managed, the great plans of transformation of the port, the Autoridad Portuaria of Seville (Wharf Authority) has elaborated a development plan that foresees a quality and quantity rise of the current infrastructures and the services offered. With this development plan, the Port wants to maintain and reinforce its role as an economic engine of the town and achieve a sustainable and sustained development.

The River, as a sports and leisure venue

The development of sports that use the Guadalquivir as their main venue was transformed during the last few years in one of the most common uses. The practice of rowing, canoeing and sailing is frequent on the river, where it is normal for competitions, celebrations and championships of such sports to take place. The World Rowing Championships was hosted in Seville in 2002. In this context, a special mention goes to the Centro de Alto Rendimiento para Remeros y Piraquistas (Rowers and Canoeists High Performance Centre), recently built on the right bank of the basin, north of the lÎle de La Cartuja.
The Guadalquivir is enjoyed also from a tourist's point of view. From this aspect, there are several enterprises in Seville that are dedicated to the organisation of cruises along the river and of celebrations of events on board floating halls built for that purpose. Surrounding the river there are many important Seville monuments, such as the Torre del Oro, Giralda or the Square of Taureaux du Maestranza, and the extended itineraries offered, all along a main axis crossing the town, make a boat ride a favourite activity for those who visit us every day.

Citizen participation in the decision-making

The citizen's advice on administration activities is transformed in a fundamental element in our time. There are legal matters to guarantee the required levels of participation by citizens. This means that the Urban Management Law makes it mandatory to open a period of exposition to the public after the Initial Approval of any activity project, during which to produce the final social contrast to the solution proposed. Once this period of exposure is over, the allegations presented are analysed on a technical and legal basis. The preliminary document of allegations contains the proposals for modifications that are considered appropriate and that are solved by the competent urban organisation.

Tallinn

Tallinn proposes the general and detailed plan for Pirita, social and recreational spaces, including the realization of private infrastructures with the collaboration of Hariu and of the university.
The territory is situated along the river Pirita. The representation includes the styling of standards to protect nature and the realization of recreational structures.

Information

Extension of the Pirita river

- The Pirita river basin covers about 2000 Km
- The natural river basin is 731 km.

Consistency

- Natural appearance
- Houses on the shorefront
- Connection between Paukula Catchaments and Lake Ulemeste, where drinking water for Tallin is taken
- The river valley is protected since 1957.

Urban population

PIRITA
10.200 inhabitants
95% Estonians
5% Russians

Critical points and urban pressure

- A very popular place for recreation
- Uncontrolled leisure activities
- Vandalism
- Some residential districts are not connected to the town sewage system
- The river valley is endangered by building

River hydraulic conditions and behaviour

- The Pirita river flows through a primeval alluvial valley
- In some places a limestone outcrop is visible
- 25 species of fish
- Ecological conditions improved since 1993
- During the summer the average content of N is high

Hydrography and natural conditions

- The Pirita river flows through a primeval alluvial valley
- In some places the limestone outcrop is visible
- 25 species of fish
- Ecological conditions improved since 1993
- During the summer the average content of N is high

Ports

- Pirita Yacht Port and Tallinn Olympic Sailing Centre are in the river mouth
- Over 3000 yachts visit Pirita harbour each year
- It is possible to rent rowing-boats
- Springtime canoe trips are popular

Leisure

- Cycling, running or hiking in the forest
- Sports events like jogging, cross-country bicycle racing, school sports days, boat trips
- Family picnics over weekends, sun bathing, swimming
- Skiing, sledging, skating in the winter

Nature of Pirita district

- Pirita district is the greenest part of Tallinn
- 480 ha of forest
- 118 ha of parks, green corridors, esplanades
- Botanical Garden of Tallinn since 1961

Nature Protection

Pirita river valley nature protection area

- The Pirita river valley nature protection area, under protection since 1957
- Size 523 ha, in Pirita district ~ 390 ha
- 28 species of protected plants
- 25 species of fish
- 42% of area covered with forest

Objectives of Pirita riverlinks

- To manage activities in the field of public mobilization, environmental education and publicity
- To publish a guidebook about Pirita green areas and nature protection
- To make proposals to reconsider protection regulations according to the welfare of local inhabitants and nature
- To review and give opinions on designs and plans, if and to the extent provided by law
- To make proposals to designate Kloostrimets under the list of natural protected objects
- To continue landscape management according to the Pirita river nature protection area management plan
- To deepen the Pirita river mouth to avoid eutrophication

A selection of advance and river cities in Europe

Bilbao
Bremen
Budapest
Köln
Lisboa
Lyon Confluence
Lyon Parc Miribel
Padova
Paris
Porto
Praha
Regensburg
Roma
Strasbourg
Torino
Wien

Bilbao

1. Introduction

The industrial and commercial might characteristic of Bilbao from its foundation up to the 1970s, made it the financial and services centre of an extensive hinterland, larger than the area of the current Euskadi Autonomous Community.
The crisis, which began in 1975, created a series of structural problems caused by an essentially industrial monoculture based on the traditional sectors of iron and steel, shipbuilding and hard goods, which have all suffered worldwide due to an insufficient autonomy of the service sector, too closely linked to industrial development.
This situation produced a considerable social and urban impact, causing the decline of the industrial system, static levels of unemployment, deterioration of the environment and the urban structure, emigration and stagnation of the population as well as marginal social problems, all of which have occurred in other industrial cities such as Pittsburg, Glasgow, Hamburg, Rotterdam or Turin.
Due to this situation, Bilbao needed to begin an urban transformation process to generate new employment opportunities, essentially in the tertiary sector.
An improvement in living conditions runs parallel to the need to create employment, increase income levels and regenerate the habitat, offering greater opportunities of leisure, culture, better environment, etc. to its inhabitants.
The quality of the urban environment and income levels in industrial cities such as Bilbao tend to be incompatible since most of them are rich and with a high index of occupation, but environmentally they are very inadequate.
Today environmental decline and the damaged habitat caused by competitiveness are an international loss, so it is indispensable to overcome this situation by creating new jobs in the development of the tertiary sector and to attract investments to make them possible. Cities compete amongst themselves to attract new companies looking for alternative locations, and so an environment of quality becomes indissolubly tied to obtaining a higher income.
It became necessary to develop a post-industrial city to replace the industrial one with ambitious renewal programmes, establishing future urban development guidelines involving the whole area around the Nervion river in the modern extended city.

GENERAL INFORMATION	
Case Title:	Regeneration of Abandoibarra
City:	Bilbao
Country:	Spain
Region:	País Vasco
Population:	370.000 inhabitants
Name of the river:	Nervión
Contacted organisations:	Bilbao city council
Postal address:	Plaza Ernestyo Erkoreka, 1 - 48007 Bilbao
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The recovery of the Estuary is one of the more significant landmarks in this programme. The coexistence of manufacturing and residential activities, which was originally possible, disappeared with the industrial revolution which introduced productive machinery incompatible with the quality required for human habitat.
Liberated from manufacturing activities, the Estuary and its ports became elements of enormous potential to Bilbao. The river meanders through a large part of the city and offers an important urban open space with potential for recreational, residential and tertiary activities, the principal axis of the new city as well as a symbolic element.

SOURCES USED	
Website:	www.google.com
Publication:	-
Plan:	Special Internal Reform Plan of Abandoibarra
Project:	-
Magazine:	Magazine of Bilbao Ría 2000
Newsletter:	-
Other:	-

The Abandoibarra area, where the Euskalduna shipyard was located as well as dockland warehouses, a container rail terminal and some industrial constructions, is included in this framework, with a total surface area of 35 hectares.

2. Method

The analysis defining the new destination of this space, was basically urban and was set out in the new Bilbao General Urban Management Plan, developed as an answer to the problem described above. It stated that:
Administrative, commercial and cultural activities, professional services, etc. of a central nature are to be conducted above all in Bilbao, but located specifically in the town council: in part of the Old Town, the Extension and the neighbourhood of San Pedro de Deusto. Due to the scarcity of supply, this concentration produces competition among the main residential activities, traditional in these areas, and the centralised tertiary activities. It could entail dislocation from the first to the second.
With the current supply of ground and construction and without considering a new alternative, this process of tertiary development could obviously destroy the life-style for which it was created, because the pressure of the tertiary activities would destroy the "weak" local and residential activities and neither the building typology nor the morphology of the original urban areas would be respected.
This would have happened with the strengthening of Bilbao as centre of the metropolitan system and the conservation and revitalisation of the current urban morphology and building typology in the central area if there had been no alternative to the current situation.
Any radical alternative to the creation of a new "centre" would lack feasibility in such a situation since the foreseeable development of the metropolitan built-up area would not permit the large growth required, and its creation would have to be made at the expense of the mass of activities of the existing one – entailing

transfer costs without compensation – since in the immediate future the increase in tertiary activities would not have a sufficient volume to accumulate a minimum critical mass to make another metropolitan central area possible.
So it is obvious that any alternative proposal would have to be an addition to the current centre, making the conservation – recreation of what is pre-existent compatible with the consequent increase in the quality and effectiveness of the present model.
The "complementarity" of the alternative to the built-up city shows the physical possibilities available in the existing interstitial spaces in the built-up area to accomodate services, cultural and administrative activities, etc. This is not part of the urban centre but includes the port quays, obsolete railway infrastructures and central areas of a marginal nature.

3. Objectives

The Abandoibarra Area, located next to the extension, was considered because it was the most suitable space to design a complement to the central area, a representative and capacious area to house the new activities as well as an emblematic space of a public character which was needed between the city and the river to convert into a true "Regional Central Area" with sufficient attractions.
Consequently, a mixed area was created: residential as well as directional and representative with offices and businesses with a commercial and activities complement for a tertiary leisure centre, whose purpose is to house all activities that traditionally characterise urban centres in a common space.

This central business area was Bilbao's first opportunity to create something that would allow it to compete with various European cities and the rest of the world to lead economic and technological development, through the redevelopment of a derelict area of abandoned activities, to face the future.
The present economic situation, with capital set aside to invest in the recovery of degraded urban spaces, a result of the change in industrial development, creates a situation that the city cannot ignore.
The industrial and port activities in the Abandoibarra area were previously governed by the Bilbao and Regional General Plan which favoured these activities at the expense of the use of the water front by the general public. This was exacerbated by the difference in level between the Extension platform and the area of the docks and by the enclosure of the port and the railway.
The transfer of the docks and the container terminal outside Abra together with the closing of the Euskalduna shipyard, made the development and promotion of Abandoibarra possible, one of the greatest areas of urban potential for its location in respect to the city as well as to the local and regional central area.

4. Results obtained

The result has been the preparation of a new Special Internal Reform Plan, whose design was the result of a competition won by César Pelli. Besides residential and tertiary practices, the following have been constructed in this area:

- a hotel designed by the Mexican architect Ricardo Legorreta;
- the new Congress and Music Palace "Euskalduna", designed by Federico Soriano and Dolores Palacio. In 2003 it won the prize for the best Congress Palace awarded by the World Association of Congress Centres;
- the Guggenheim Museum, designed by Frank Gehry;
- the Marine Museum, which illustrates the naval history of Bilbao with boat construction and marine trade. The dry docks of the old shipyard have been restored as an historical memory of the location and to exhibit boats outside the complex which would not have been big enough to accommodate them all;
- a leisure and trade complex designed by Robert Stern;
- currently there is a project for tower offices designed by Cesar Pelli as well as the new library of the Deusto University by Rafael Moneo, also responsible for the construction of a "paranymph" for the Public University of the País Vasco whose project goes to an architect awarded with the "Pritzker".

5. Comments

Although the construction and urbanisation of the Abandoibarra sector is not yet finished very positive results have been obtained for the city, as much from the international acclaim received as from economic aspects.

An example of the positive results is evident in the data prepared by the Consulting KPMG Peat Marwick on the impact of the Guggenheim Museum during its two first periods of life (from 1/10/1997 to 19/10/1998 and 19/10/1998 to 31/12/1999).

The project cost 132.22 million Euros to implement: 84.14 million for construction costs of the museum and the urbanisation of the environment; 36.6 million for the purchase of the art works in the Guggenheim Bilbao Museum and the remaining 12.2 million for membership of the Foundation to guarantee the rotation of its collection and to avoid the long period that the consolidation of a new museum usually entails and a quality level similar to 5th Avenue, New York right from the start.

This expenditure for the Guggenheim Bilbao Museum brought a value-added and wealth generation in the Autonomous Community of the País Vasco economy that rose to more than 337 million GDP, 144 million (0.47% of the Euskadi GDP) in the first period and 193 million in the second, (0.62% of the Euskadi GDP).

This wealth increase has been augmented by the additional income from the "Hacienda Pública Vasca": 63 million Euros as V.A.T. Society Tax and Personal Income Tax, 27 million in the first period and 36 in the second.
It also created 3.816 jobs (0.51% of the total employment of Euskadi) in the first period and 5.083 in the second (0.67% of the total employment of Euskadi). These employment figures do not indicate the number of newly created jobs, since part of this employment demand involves existing jobs before the opening of the Guggenheim Bilbao Museum.
In comparison the Euskalduna shipyard, formerly situated in the Abandoibarra area, generated 3.000 direct and 1.000 indirect jobs through contracts in its most productive years. In the last few years the total employment of the shipyard dropped to between 2.300 and 2.400 jobs.
The Euskalduna Palace, has also had an important role in the generation of wealth and employment in Bilbao, with the inevitable synergy between the Palace of Congress and the Guggenheim Museum.
Furthermore, in the Abandoibarra transformation process, there are other more intangible benefits which are no less important, including the recovery of Bilbaoan self-esteem, after the industrial crisis and the high levels of unemployment that the latter generated. A clear flexion in this decline has happened and although there is still much to be done, a strong economic recovery is underway.

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Summaries

Per lo sviluppo della città post-industriale si è reso necessario ricollocare le industrie in base ad un programma di rinnovo urbano, stabilendo il futuro sviluppo secondo delle linee guida che coinvolgono tutta l'area lungo il fiume Nervo dove è previsto lo sviluppo della città moderna.
Liberata dall'attività manifatturiera, l'area dell'Estuario ed il suo porto diventano elementi di un'enorme potenzialità per Bilbao. I meandri del fiume attraversando uno larga parte della città offrono una miriade di spazi aperti adatti alle attività ricreative, alla residenza ed all'attività terziaria, gli assi principali della nuova città assumono il ruolo di elementi simbolici.
L'area Abandoibarra, dove erano collocati i cantieri navali di Euskalduna così come i magazzini, un terminal ferroviario per i container ed un'industria di materiali da costruzione si estende per 35 ettari.

Die ursprünglich industriell geprägte Stadt soll mit ehrgeizigen Erneuerungsprogrammen zu einem post-industriellen städtischen Gefüge entwickelt werden. Dafür wurden Richtlinien der zukünftigen Stadtentwicklung formuliert, die das gesamte Gebiet um den Nervion-Fluß innerhalb des ausgedehnten städtischen Territoriums einbeziehen.
Von betrieblichen Aktivitäten "befreit" wurden das Mündungsgebiet und die dort gelegenen Hafenanlagen Bestandteile eines enormen Entwickungspotentials für Bilbao. Der Fluß mäandert durch weite Bereiche der Stadt und eröffnet damit einen wichtigen städtischen Freiraum, der Potentiale für Erholung, Wohnen und weitere städtische Aktivitäten und für die Ausbild
Das Abandoibarra-Gebiet, in dem sich sowohl die Euskalduna-Werft als auch Hafen-Lagerhäuser, ein Containerbahnhof und andere Industrieanlagen einst befanden, ist mit einer Gesamtfläche von 35 Hektar ha in diese Aktivitäten einbezogen.

Establecida la necesidad de superar el modelo industrial, ya que su crisis era estructural y no coyuntural – como al principio muchos habían creído –, fue necesario iniciar el paso a la ciudad post-industrial, estableciendo las pautas de nuestro futuro desarrollo urbano mediante una ambiciosa renovación que debía abarcar toda el área del bajo Nervión a fin de configurarnos como una metrópoli moderna.
Así podemos decir que en gran medida, Bilbao se construyó de espaldas a la Ría, pero que la misma liberada de sus actividades productivas y por tanto con sus márgenes portuarias disponibles a corto y medio plazo, se muestra como un elemento de enorme potencialidad, ya que discurre a lo largo de gran parte del consolidado urbano, por lo que debe constituirse en el espacio más cualificado y vertebrador de la metrópoli, articulando espacios lúdicos, residenciales y de actividades terciarias, representando el eje principal de la nueva ciudad, así como su elemento más emblemático.
En este contexto se encuadra el área de Abandoibarra, con una superficie de 35 hectáreas y en la que se hallaban emplazados el astillero Euskalduna, tinglados portuarios, una estación de contenedores por ferrocarril y algunos usos industriales.

Il s'agissait de faire évoluer une ville post-industrielle pour remplacer la ville industrielle à l'aide de projets ambitieux de régénération définissant les grandes lignes du renouveau urbain futur avec l'intégration de l'ensemble des quartiers autour du Nervion dans l'extension de la ville moderne.
Libérés des activités manufacturières, l'estuaire et ses ports sont devenus des éléments dotés d'un potentiel énorme pour Bilbao. Le fleuve serpente à travers une grande partie de la ville offrant d'importants espaces urbains ouverts avec des possibilités d'activités résidentielles, tertiaires et de loisirs comme étant l'axe principal de la nouvelle ville ainsi qu'un élément symbolique.
Le quartier d'Abandoibarra, où étaient situés les chantiers navals d'Euskalduna ainsi que des entrepôts, des quais, un terminal à conteneurs du chemin de fer et quelques bâtiments industriels, fait partie de ce cadre avec une superficie totale de 35 hectares.

Siin osutus vajalikuks arendada välja postindustriaalne linn, mis asendaks senise tööstuslinna. Selleks loodi ambitsioonikaid uuendusprogramme, mis kehtestasid suunised linna edasiseks arenguks, hõlmates kogu Nervioni jõe ümbrusse jäävat moodsa laiendatud linna ala.
Olles vabanenud tootmistegevusest, andis jõesuue koos oma sadamatega Bilbaole tohutu potentsiaali. Jõgi lookleb läbi suure osa linnast ning see on linnale oluliseks avatud ruumiks, kus on võimalik arendada puhkeja elamisvõimalusi ning teenindustegevust. Jõgi on uue linna põhitelg ning ühtlasi ka sümboolne element.
Uuendusprogrammi on kaasatud ka 35 hektari suurune Abandoibarra piirkond, kus asus Euskalduna laevatehas, kaiäärsed laohooned, raudteeterminal ja mõned tööstusrajatised.

Bremen

1. Introduction

The city of Bremen is coined through its River Weser. Bremen has been a seaport since the Middle Ages. All through its history this fact has had an important impact on the social, economic, cultural and political development of the city.

Particularly in the second half of the 19th century the economic structure grew and industrial capacities – industrial shipbuilding in big shipyards, the processing of trade goods, such as coffee, cocao, tobacco, fruit and cotton – became more and more important. Expansive trade of goods, storing production and packaging increased the city's wealth. Widespread areas in the west of the city were involved in th nomy was sustained until the 1970s und 1980s.
Nowadays, like many other port cities, Bremen has to answer the challenges resulting from major shifts in global economy. The economic restructuring in the last two decades of the 20th century indeed caused friction and serious problems for the city's development. One of the most significant employers in the city, the shipyard "AG Weser" (today's Space-Park) closed down in 1984 after more than 100 years of successful shipbuilding. And in 1997 Bremen lost its second traditional big shipyard, the "Bremer Vulkan-Werft AG".
Since the late 1960s the structural changes in the maritime sea traffic economy as a consequence of ongoing containerisation left its mark on the old harbour districts. After the handling of sea goods decreased to less than 50% of its original quantity, new options for the usage of the districts became not only a possibity, but a necessary perspective.
At present, about 300 companies with more than 6.000 employees, mainly in the range of logistics, trade and production are located in the old harbour districts. Most of them represent the historical identity of the area. Also at present, the great challenge is to develop new perspectives for a 300 ha wide area, that underwent massive changes in the maritime-oriented economy.

GENERAL INFORMATION	
Case Title:	Overseas Town
City:	Bremen
Country:	Germany
Region:	Bremen
Population:	540.000 inhabitants
Name of the river:	Weser
Contacted organisations:	Senator for construction, environment and Transportation
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Names of contacts:	Dr. Detlev Söffler

SOURCES USED	
Website:	www.Bremen.de; www.ueberseestadt.de
Publication:	Various of the Bremen Investment Agency (BIG)
Plan:	Masterplan Overseas Town
Project:	-
Magazine:	-
Newsletter:	-
Other:	-

2. Method

The urban development activities along the river Weser are part of a strategic middle range timeframe between the year 2000 and the year 2020. Now, two important hints of this exciting process are being stressed.

The Rediscovery of the river (the "Schlachte")

According to the city's "rediscovery of the river" starting in the early 90s, the shores and harbours along the Weser became important objects of Bremen's urban development.
The restructuring has already started. For instance the development of the historical shoreline "Schlachte" into a culinary-maritime area in the centre town.

The process of upgrading the old port districts

This development will find an adequate counterbalance in the plans and projects for the "Overseas Town".
The challenge is to create an attractive urban location step-by-step.
Step-by-step - there is no doubt, that the revitalisation of the old port districts is part of a long term process of upgrading the area through the introduction of new usages. Important strategic aspects are:

1. The *masterplan* (since 2003) is a leading, but also flexible basic tool for later more detailed concepts and projects. It is taking into consideration all aspects of urbanistic development, free-space-planning and infrastructure. The masterplan determines the usage for the eight main areas of the "overseas town";
2. *New streets* ("Hansator") have been build that restructure the inner logistics of the "Überseestadt" (Overseas Town) and open the area to the traditional neighbourhood districts. And in the next years a direct access (the amount of public money is 44 Mio) to the historical city will be build;
3. The development and realization is headed by the "Überseestadt GmbH" - an affiliated company of the "*Bremen Investment Agency*" (Bremer Investitions-Gesellschaft-BIG). The aim of this "Overseas Town GmbH" is to newly develop the area, structure and market the sections;
4. Targeting the creation of *10.000 new jobs* in 2020, Bremen is trying to conduct a theme-based process of upgrading. Therefore a wide range of companies of diverse kinds are needed: Office work, industry, cultural institutions, leisure, freshness-center-north, gastronomical offers, Bremen High School of Art, knowledge-based technology enterprises, service supply for instance in the range of renewable energies. These usages are enlarging the 300 existing more traditionally orientated companies;
5. *Public investment and Public-Private-Partnership*. The public investment for the complete realisation of the infrastructure will amount up to 385 Mio. The infrastructure is a basal stimulation for a predicted private investment which will be from 590 to 2000 Mio;
6. The close collaboration with private investors is necessary to develop the parts of the Oversea town. Therefore the project "*harbour front*" (Hafenkante) is to be realized. A 10-ha-sized part of the Overseas Park is handed over to a group of investors with the obligation to develop an area of supply, industry, culture, leisure and with certain option for modern housing;
7. The process of restructuring will be enhanced by *attractive new architecture, a high-quality design of the public spaces*, streets and walkways and a outstanding urban silhouette and a excellent urban integration;
8. The urban development process requires continuous *public discussions and confrontations* to verify our experiences, to test our ideas and visions, to correct our faults and to find out better methods of urban development.

3. Objectives

The whole concept of the Overseas Town is embedded in a urbanistic restructuring process which is part of the city´s "rediscovery of the river". The shores and old ports along the Weser become important objects of Bremen´s urban development.

One challenge will be to open up the port area as a former "special area" and integrate it closely into the city through crucial restructuring of the area infrastructure. Furthermore, it will be an important aim to establish the Overseas Town in the perception of Bremen´s inhabitants and guests through high-quality offers in the range of culture, leisure and relaxation, especially on the waterfront.

In this case, the settlement and resettlement of emission-intensive usages typical of harbour regions must be carefully planned.
At every stage of upgrading the old port areas, the aim will be to combine typical harbour economy, new technologies and other commercial usages with a high urbanistic quality of life.

4. Results obtained

The realisation of the concept to restructure the old harbour areas will take place in four steps:

- Between 2000 and 2003, the aforementioned settlement of the "Frischezentrum Nord" took place. 16.3 ha of the former Überseehafen have been redeveloped according to its new usage;
- Also within this timeframe, the new streets "Hansator" und "Konsul-Smidt-Straße" have been built to restructure the inner logistics of the "Überseestadt" and open the area to the neighbouring districts. In connection with this, new greenway connections and places were created;
- Furthermore, the "Speicher XI", a storage building under monumental protection, has been sold and restored. Now, the "Speicher" is hosting the Bremen High School of Arts, a number of service suppliers, the Port Museum and a cultural forum;
- New knowledge-based technology enterprises and service supply for instance in the range of renewable energies could be established. These usages are enlarging the 300 existing more traditionally orientated companies.

Between 2003 and 2006, redeveloped real estates left and right of the new streets "Hansator" and "Konsul-Smidt-Straße" will be offered to investors and companies interested in being involved in the "Overseas Town".

Furthermore within this timeframe, the direct linkage into the city will be finished.The sale of the old "Hafenhochhaus" ("harbour-skyscraper") to a bidding consortium that emerged from an international investor procedure will be realised. The plan for this building aims to keep the old architecture and combine it with a visionary new building.

5. Comments

Since the early '90s Bremen is rediscovering the Weser river. Nowadays this process is closely connected with the upgrading of the old port districts. Both developments form a close spatial and thematic connection. And both are very well integrated into the RiverLinks project.
Since 2000 the old historic waterfront and medieval port – the so called "Schlachte" – became integrated into the everyday life of the Bremen population and tourists in the city. A new maritime and culinary area was established and became a success story.
Nearby the revitalisation and upgrading of the very large 300 ha old industrial port district "Overseas Town" is on the agenda of the Bremen urban development. This process is driven forward by a very interesting mixture of different methods (masterplan, considerable public investments, public-private-partnership, a thematic orientated development of locations, attractive architecture, workshops and public discussions).
In the course of the next 20 to 30 years it will become clear how successful the realisation of a new overseas town will be. Already today exciting approaches can be seen on one of the biggest European construction sites.

6. Synthesis sheet

Case	High	Medium	Low	Absent
Ferry services, historic boats		*		
Cafés, restaurants		*		
Harbours and marinas		*		
Parks and promenades			*	
Cycle routes		*		
Sports activities			*	
Artificial lighting systems				
Theatres, museums, science centres				*
Water quality measures				*
Water management options				*
Housing and offices			*	
Reduced motorised traffic, parking			*	
Integrated masterplan	*			
Art and sculptures			*	
Temporary markets and festivals			*	
Facilities for children and the elderly				*

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Summaries

Sin dai primi anni '90 Brema sta riscoprendo il fiume Weser. Attualmente questo processo è strettamente collegato all'ammodernamento dei distretti del vecchio porto. Sin dal 2000 il vecchio lungofiume e il porto medievale – il cosiddetto "Schalachte" – sono divenuti parte integrante della vita di ogni giorno della popolazione cittadina e dei turisti. È stata creata una nuova area dedicata alle attività marinare e alla cucina che sta facendo registrare un notevole successo. Nelle vicinanze, il programma di sviluppo urbano di Brema prevede la rivitalizzazione e l'ammodernamento dell'"Overseas Town", un vecchio distretto industriale del porto esteso 300 ettari.
Nei prossimi venti-trent'anni si saprà quanto successo avrà avuto la costruzione del nuovo "Overseas Town". Già oggi tuttavia vanno ammirate alcune eccitanti vie d'accesso a quello che è uno dei più grandi progetti in corso di realizzazione in Europa.

Seit den frühen 90er Jahren entdeckt Bremen die Weser auf neue Weise wieder. Seit dem Jahre 2000 ist der städtebaulich aufgewertete mittelalterliche Altstadthafen, die "Schlachte", eine maritime und kulinarische Attraktion für Bremer und Gäste der Stadt.
Gegenwärtig ist dieser Stadtentwicklungsprozess eng mit der Revitalisierung großer, vormals industriell geprägter Hafenareale verbunden. Im Verlauf der nächsten 20 bis 30 Jahre wird Zug-um-Zug eine neue „Überseestadt" (ca. 300 ha) realisiert werden. Schon heute sind spannende Ansätze auf einer der größten europäischen Baustellen zu beobachten.

Desde principios de los 90, Bremen empezó a redescubrir el río Weser. Hoy en día, este proceso está estrechamente vinculado a la modernización de los viejos distritos portuarios. Desde el 2000, el viejo muelle histórico y el puerto medieval – conocidos como "Schlachte" – llegaron a integrarse en la vida diaria de la población de Bremen y de los
Bastante cerca de allí, la revitalización y modernización del extenso distrito portuario industrial de 300 ha "Overseas Town" forma parte de los planes de desarrollo urbano de Bremen. En el curso de los próximos 20 - 30 años se demostrará en qué medida compensa llevar a cabo una nueva "Overseas Town". Hoy en día, todavía se tienen que ver planteamientos admirables en uno de los mayores terrenos constructivos de Europa.

Depuis les années 90, Brême redécouvre la rivière Wese. Aujourd'hui, ce procesus est étroitement lié à la reconversion des anciens quartierts portuaires. Depuis 2000, le port médiéval et le quartier historique des quais dénommé le «Schlachte» font partie de la vis quotidienne des habitants de Brême et des circuits touristiques. Une nouvelle zone maritime et gastronomique qui a connu un large succés a été développée.
La vitalisation et la modernisation de prés de 300 ha dans le vieux port industriel, opération dénommée Overseas Town, est planifiée.
Dans les 20 à 30 prochaines années, il sera démontré combien il était utile et nécessaire de réaliser un nouveau Overseas Town. Aujourd'hui déjà, des perspectives saisissantes peuvent être admirées sur ce que l'on peut considérer comme un des plus gros chantiers.

1990. aastate algusest saadik on Bremen taasavastamas Weseri jõge. Tänapäeval on see protsess tihedalt ühendatud vana sadamapiirkonna uuendamisega. Alates 2000. aastast on vana ajalooline veepiir ja keskaegne sadam – nii nimetatud "Schlachte" – integreeritud Bremeni elanike ja turistide igapäevaellu. Rajati uus mere- ja kulinaariapiirkond, mis on väga menukas.
Samale alale on üsna lähedal 300 ha suurune vana tööstussadama piirkond "Overseas Town - Ülemere linn", mis on Bremeni linliku edenemise arengukavas. Järgnevad 20 või 30 aastat näitavad kuidas projekt areneb ning kui edukaks osutub uus "Overseas Town". Juba tänapäeval on põnev jälgida ühe Euroopa suurima ehituse arengut.

Budapest

1. Introduction

The length of the river in Hungary is 417 km, the average slope of the bed is 35.4-6 cm/km, its average width is 300-600 m, the speed of the current is 7.6-3.2 km/hour and its depth is 2-5 m. Its whole length can be navigated by boat in 10-12 days with 3-4 rest days.
The Danube in Budapest flows between high stone walls; its bed is narrow, the current is fast and those piloting boats have to be careful of their own craft and of river traffic generally. The passengers on the boats can admire the Buda Castle and the panorama from the Danube, declared a part of the World Heritage by UNESCO.
The Danube River is of utmost importance to Europe's wildlife. But it cannot be viewed in isolation: combined with its tributaries, groundwater bodies, surrounding floodplains, forests and meadows, it is home to an enormous variety of plants and animals.
Not only are these plants and animals interdependent, but so too are the people living in the Danube Basin who are wholly reliant on the river and its wildlife.

2. Objectives

Freight transport, hydroelectricity, water supplies, irrigation, and fishing are all found on the Danube.
Daily river stager reports are available on internet, it is possible to see water level and flood alerts.

Margaret Island

Margaret Island and Margaret Bridge

3. Results obtained

The Danube River basin countries and the European Union signed the Convention on Cooperation for the Protection and Sustainable Use of the River Danube (the Danube River Protection Convention) on 29 June 1994, in Sofia. The Convention is aimed at achieving sustainable and equitable water management. The signatories have agreed to cooperate on fundamental water management issues by taking: «all appropriate legal, administrative and technical measures to at least maintain and improve the current environmental and water quality conditions of the Danube River and of the waters in its catchment area and to prevent and reduce as far as possible adverse impacts and changes occurring or likely to be caused».
There is a website "The Danube River Basin". All countries lying along the Danube, will celebrate Danube day on 29th of June 2004 in Vienna.

GENERAL INFORMATION	
Case Title:	Margaret Island
City:	Budapest
Country:	Hungary
Region:	-
Population:	1 850 000
Name of the river:	Danube
Contacted organisations:	Budapest City Government
Postal address:	-
Tel, fax, e-mail:	-
Names of contacts:	-

SOURCES USED	
Website:	http://www.ceit.sk/wwwisis/sap1.htm; http://www.public.asu.edu/~goutam/gcu325/danube.htm; http://www.datanet.hu/hydroinfo/vituki/evizduna.htm; http://www.rivernet.org/danube/danube.htm
Publication:	-
Plan:	environmental programme for the danube river basin, strategic action plan for the danube river basin 1995 - 2005
Project:	-
Magazine:	-
Newsletter:	-
Other:	-

Map of Budapest. On the left of the river is Buda, on the right is the area called Pest. In the middle is Margaret Island.

4. Synthesis sheet

Case	High	Medium	Low	Absent
Ferry services, historic boats		*		
Cafés, restaurants		*		
Harbours and marinas			*	
Parks and promenades	*			
Cycle routes		*		
Sports and other leisure activities		*		
Artificial lighting systems	*			
Theatres, museums, science centres	*			
Water quality measures		*		
Water management options, especially flood prevention/flood protection			?	
Housing and offices			*	
Reduced motorised traffic, parking			*	
Integrated masterplan			?	
Art and sculptures		*		
Temporary markets and festivals	*			
Facilities for children, the elderly and disabled		*		

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Summaries

I paesi compresi nel bacino del fiume Danubio e l'Unione Europea hanno firmato la Convenzione per la Cooperazione e la Protezione per l'uso sostenibile del Fiume Danubio (chiamata sinteticamente: Convenzione per la protezione del Danubio) il 29 Giugno 1994 a Sofia.
La Convenzione persegue l'obiettivo di una gestione delle acque che sia equilibrata e sostenibile. Gli stati che hanno firmato la convenzione sono d'accordo nel cooperare nella «gestione delle acque e nell'adottare tutte le misure tecniche, amministrative, legali appropriate per mantenere e migliorare l'ambiente e la qualità delle acque del fiume Danubio e di ridurre tutti gli impatti negativi presenti nel suo bacino rimovendone le cause».

Die Donau in Budapest fließt zwischen hohen Steinmauern; ihr Bett ist eng und die Strömungsgeschwindigkeit hoch, so dass Bootsführer sorgfältig navigieren und den Schiffsverkehr beachten müssen. Die Passagiere auf den Booten können die Buda-Burg und das gesamte Panorama von der Donau, das Bestandteil des UNESCO-Weltkulturerbes ist, bewundern.
Die Länder des Donau-Einzugsgebietes und die Europäische Union unterzeichneten die Konvention über die Zusammenarbeit für den Schutz und die nachhaltige Nutzung der Donau – die Donau-Schutzkonvention – am 29. Juni 1994 in Sofia. Die Konvention ist zielt darauf ab, ein nachhaltiges und gerechtes Management der Wasserressourcen zu gewährleisten. Die Unterzeichner haben vereinbart, in grundsätzlichen Bereichen der Wasserbewirtschaftung zu kooperieren. Dies soll erreicht werden durch «alle geeignete rechtlichen, administrativen und technischen Maßnahmen, die die gegenwärtige Umwelt- und Wasserqualität der Donau und der Wasserkörper in ihrem Einzugsgebiet mindestens erhalten sowie verbessern; die weiterhin so weit wie möglich nachteiligen Einflüssen sowie stattfindenden oder diese Einflüsse wahrscheinlich verursachenden Veränderungen vorbeugen oder diese reduzieren».

El Danubio en Budapest fluye entre altos muros de piedra; su cauce es estrecho, la corriente es rápida y aquellos que navegan por sus aguas tienen que tener cuidado con sus propias embarcaciones y generalmente con el tráfico del río. Los pasajeros de los barcos pueden admirar el Castillo Buda y el paisaje desde el Danubio, declarado Patrimonio Mundial por la UNESCO. Los países de la cuenca del Danubio y la Unión Europea firmaron el Convenio sobre Cooperación para la Protección y Uso Sostenible del Río Danubio (Convenio para la Protección del Río Danubio) el 29 de junio de 1994 en Sofia. El objetivo del Convenio es conseguir una gestión del agua sostenible y equitativa. Los firmantes han acordado cooperar en los aspectos fundamentales de la gestión del agua adoptando "todas las medidas legales, administrativas y técnicas adecuadas para por lo menos mantener y mejorar el medio ambiente actual y las condiciones de calidad del agua del Danubio y de las aguas en sus zonas de captación y para prevenir y reducir, en la medida de lo posible, aquellos impactos y cambios adversos ocurridos o susceptibles de producirse".

A Budapest, le Danube s'écoule entre de grands murs en pierre. Son lit est étroit, le courant est rapide et tout navigateur doit faire très attention à son bateau en particulier et au trafic fluvial en général. Depuis le Danube, les passagers à bord peuvent admirer le château de Buda et le vaste panorama, classé par l'UNESCO parmi le patrimoine mondial. Le 29 juin 1994, à Sofia, les pays du Bassin du Danube et l'Union Européenne ont signé la Convention de Coopération pour la Protection et l'Exploitation Durable du Danube (la Convention de Protection du Danube). Le but de cette Convention est d'assurer une gestion durable et équitable de l'eau. Les signataires ont convenu de coopérer sur les questions primordiales relatives à la gestion de l'eau en prenant «toutes les mesures juridiques, administratives et techniques appropriées pour au moins maintenir et améliorer les conditions actuelles de la qualité de l'environnement et des eaux du Danube et des eaux de son bassin versant, et pour empêcher et réduire dans toute la mesure du possible les impacts négatifs et des changements en cours ou susceptibles d'arriver».

Doonau jõgikonna riigid ja Euroopa Liit sõlmisid 29. juunil 1994 Sofias konventsiooni Doonau jõe kaitse ja säästva kasutamise alase koostöö kohta (Doonau kaitse konventsioon). Konventsiooni eesmärk on säästev ja õiglane veemajandus. Osapooled on nõustunud tegema koostööd veemajanduse põhiküsimustes, rakendades «kõiki kohaseid õiguslikke, halduslikke ja tehnilisi meetmeid, et vähemalt säilitada ja parendada Doonau jõe ja selle valgala praegust keskkonna- ja vee kvaliteedi seisundit ning vältida ja võimalikult palju vähendada praegusi või võimalikke kahjulikke mõjusid ja muutusi».

Lisboa

1. Introduction

This project is the result of a 1994 international competition won by *Hargreaves Associates* Landscape Architecture Studio of San Francisco, part of the Sector Plan for the 1998 Expo. Lisbon administers 800,000 hectares of land and is a prime example of an important metropolitan area, divided into seventeen comunes with more than 2,500,000 inhabitants. It is a morphologically complex city, strongly characterised by the Tago river, and its hills and valleys. Like most European cites, Lisbon has seen a great acceleration in development in the last thirty years. Today it has a fragmented urban structure consisting of large suburban areas immersed in the surrounding rural landscape and large abandoned industrial areas.
The park was one of the strategic interventions promoted by the municipality for urban and environmental restoration and the reorganisation of the metropolitan system. It covers an area of approximately ninety two hectares of previously industrial, neglected land and is situated between the confluence of two rivers which give it its name, the *Tejo* and the *Trancão*. The site is significantly transformed but the designer insisted on preserving links with the past using symbolic connotations in form and function.

2. Method

Construction was begun in 1997 and almost completed by 1998, total completion was in 2000. A layer of crushed stone and clay more than three metres thick, dragged from the Tago riverbed in the port area, was spread over the whole surface of the park. This "skin", a barrier between the contaminated ground and the new construction, acts as a foundation to the new landscape.
The park was conceived as an urban/environmental park to combine human activity, technological infrastructures and environmental values. The unusual shape of the banks is created by an artificially reconstructed serried dune system, to recycle the 575,000 cubic metres of soil dragged from the Tago riverbed.
The competition rules stipulated that the park should provide a complex system of sewage treatment, the largest of the three built for the city. It consists of three different structures (primary, secondary, tertiary) for the three main functions of the filtering and purification process. The first two stages were particularly incompatible with recreation in the park so an aerodynamic tensioned structure was built to solve the problem of integrating such different functions of recreation with technically specialised installations. This structure serves as a visual symbol for visitor orientation as well as a visual and olfactory mask for the filtering plants below, to mitigate smells and noxious emanations resulting from the purification process.
The tertiary purification system is based on biological processes which use solar de-watering as well as wetland filtration to transform sewage. Thanks to phytopurification a wide lagoon area has been created as well as a vast quantity of water to restock the water table and for park irrigation. A series of little wooden

GENERAL INFORMATION	
Case Title:	Parque do Tejo e Trancão, Expo Lisbon
City:	Lisbon
Country:	Portugal
Region:	-
Population:	Roughly 2.500.000 inhabitants in the metropolitan area
Name of the river:	-
Contacted organisations:	-
Postal address:	-
Tel, fax, e-mail:	-
Names of contacts:	-

SOURCES USED	
Website:	-
	-
	-
	-
Publication:	-
Plan:	-
Project:	-
Magazine:	-
Newsletter:	-
Other:	-

piers gives the visitor close contact with the river and the structures also deflect sediments beyond the estuary inlets, away from the park area.
The centre for environmental education is a key service of the park. An activity programme and a multimedia structure help the visitor to understand the various stages of recycling and how the systems of park construction work.

3. Objectives

The main objectives of the whole *Parque '98* were to construct new public spaces and a system of designed open areas as well as making a new metropolitan centre to redirect expansion of the city towards the east but above all to reestablish the relationship between the city and the river Tago.
As part of this, the project of the *Tago and Trencao River Park* aimed to restore a degraded industrial area by draining the polluted land, purifying the water and adding a series of infrastructures for recycling liquid and solid waste, as well as a new series of leisure facilities (sports grounds and equipment for fishing, football, rugby, tennis, golf, riding, etc as well as a centre for environmental education).
The competition rules also encouraged reclamation of the area outside the park, as an incentive for a positive domino effect, important for Expò'98. The aim was to stimulate progressive integration of these areas with the city of Lisbon, *making a vast territory of about 160 hectares on the southwest of the site more attractive in order to increase its value.*

4. Results Obtained

The new park is a place of great aesthetic value which unites the traditional uses of a public open space with recreational and environmentally ecological, educational functions, demonstrating the regeneration of a polluted area.

The objectives set out in the competition requirements have been amply achieved: landscape, environment and urban reclamation as well as the improvement of the river resource.
The relationship with the river landscape has been reinstated both from the morphological and compositional point of view and shows the processes of a vital exchange between natural and useful elements in the ecological plant purification installations which serve the city while maintaining biodiversity._
The park also represents a new idea of landscape in the accentuated artificiality of the construction which does not try to restore a "natural" physical conformation to the site.
Once the degeneration and pollution which caused the deterioration of the site were identified, they were recycled through the "project-process" to start the progressive transformation and purification of the scum and toxic liquids, residues from the previous industrial site. As soon as these mechanisms for the regeneration of the soil and water had been activated, the ecological processes and construction of the landscape began to take shape, allowing the original, precious humid biotope to come back to life and begin to grow.

5. Comments

The use of the most recent techniques of water purification by wetland filtration, using plants is combined with a strong formal expressiveness. All the expedients and solutions adopted to solve the functional problems (decontamination of the site, use of waste and excavated material, construction of a dump which would normally be disturbing, creation of a water recycling system, the plan to use waste gas from decomposing materials for the park's lighting system) show a real ability to adapt natural processes and control the design of the project. The connection between Art and Technique, between form and function, is linked to ability and innovative capacity.
The *Parco di Tejo e Trancão* interprets and synthesises brilliantly the best characteristics of new public open spaces in contemporary cities, following sustainable, ecological and economic objectives at the same time. The initial limits have been transformed into stimuli for formal research into landscape design, incorporating principles and techniques of environmental ecology.

6. Synthesis sheet

Case	High	Medium	Low	Absent
Ferry services, historic boats	*			
Cafés, restaurants		*		
Harbours and marinas	*			
Parks and promenades	*			
Cycle routes		*		
Sports activities	*			
Artificial lighting systems		*		
Theatres, museums, science centres	*			
Water quality measures	*			
Water management options	*			
Housing and offices				*
Reduced motorised traffic, parking		*		
Integrated masterplan		*		
Art and sculptures				*
Temporary markets and festivals			*	
Facilities for children, the elderly and disabled	*			

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Summaries

Questo progetto è il risultato di un concorso internazionale vinto dallo studio Hargreaves associates di architettura del paesaggio di San Francisco e parte del piano di settore per l'Expo del 1998.
Il parco rappresentava uno degli interventi strategici promossi dalla municipalità per il recupero e la riorganizzazione urbana e paesistica del sistema metropolitano. Esso copre l'area industriale dismessa, estesa approssimativamente 92 ettari ed è situato alla confluenza dei due fiumi che gli danno il nome, il Tejo e il Trancio. Il sito è stato trasformato in maniera significativa ma i progettisti hanno insistito nel preservare i collegamenti con il passato usando connotazioni simboliche nella forma e nelle funzioni.
Il nuovo parco è un posto di grande valore estetico che unisce gli usi tradizionali dello spazio pubblico aperto con funzioni ricreative, ecologiche ed educative, dando una dimostrazione di come si possa rigenerare un'area inquinata.
Il parco del Tejo e Trancao interpreta a sintetizza brillantemente le migliori caratteristiche dei nuovi spazi aperti delle città di oggi, perseguendo obiettivi al contempo sostenibili, ecologici e economici. I limiti iniziali sono stati trasformati in stimoli per la ricerca formale nel disegno paesaggistico, incorporando principi e tecniche dell'ecologia ambientalista.

Dieses Projekt ist das Ergebnis eines 1994 durchgeführten internationalen Wettbewerbs, den das Landschaftsarchitekturbüro Hargreaves Associates aus San Francisco gewann und der Teil der Sektoren-Planung für die EXPO 1998 war.
Der Park war eine der strategischen "Interventionen", die von der Stadtverwaltung im Rahmen der städtebaulichen und ökologischen Sanierung sowie der Reorganisation des metropolitanen Systems vorgenommen wurde. Er umfasst eine Fläche von fast 92 Hektar eines früheren, inzwischen verwahrlosten Industriegebietes, das am Zusammenfluss der Flüsse Tejo und Trancão gelegen ist und von diesen seinen Namen ableitet. Das Gebiet wurde grundlegend umgestaltet, jedoch bestanden die Planer auf dem Erhalt von Verbindungen mit der Vergangenheit durch die Verwendung symbolischer Konnotationen in Formen und Funktionen. Der neue Park ist ein Ort mit hohem ästhetischen Wert, der die traditionelle Nutzung eines öffentlichen Freiraums mit Erholungs-, Umwelt und Bildungsfunktionen vereint und zugleich die Sanierung einer mit Schadstoffen kontaminierten Fläche demonstriert. Der Parco di Tejo e Trancão interpretiert und synthetisiert in bestechender Art und Weise die besten Merkmale neuer öffentlicher Freiräume moderner Städte durch die gleichzeitige Verfolgung nachhaltiger ökologischer und ökonomischer Zielstellungen. Die anfänglichen Begrenzungen haben sich in einen Anreiz für eine Landschaftsgestaltung verwandelt, die Prinzipien und Verfahren der Umweltwissenschaften berücksichtigt.

Este proyecto es el resultado de una competición internacional ganada por el Estudio de Arquitectura Paisajística de Hargreaves Associates de San Francisco en 1994, parte del Plan para el Sector de la Expo de 1998. El parque era una de las intervenciones estratégicas promovidas por el municipio para la restauración urbana y medioambiental y la reorganización del sistema metropolitano. Cubre una zona de noventa y dos hectáreas aproximadamente de un terreno baldío anteriormente dedicado a la industria y situado entre la confluencia de dos ríos que le dan su nombre, el Tajo y el Trancão. El emplazamiento se ha transformado significativamente pero el diseñador insistió en preservar los vínculos con el pasado, utilizando connotaciones simbólicas tanto en la forma como en la función. El nuevo parque es un lugar de gran valor estético que une los usos tradicionales de un espacio público abierto con actividades recreativas y ecológicas medioambientales y educacionales demostrando la regeneración de una zona contaminada. El Parco di Tejo e Trancão interpreta y resume de forma brillante las mejores características de los nuevos espacios públicos abiertos en las ciudades contemporáneas, siguiendo al mismo tiempo objetivos sostenibles, ecológicos y económicos. Los límites iniciales han sido transformados en estímulos de diseño paisajístico, incorporando principios y técnicas de ecología medioambiental.

Le projet est le résultat d'un concours international lancé en 1994 et emporté par le Studio de l'Architecture Paysagé de Hargreaves Associates dans le cadre du Plan Sectoriel pour l'Exposition de 1998. Le parc représentait l'une des interventions stratégiques promues par la municipalité pour la régénération urbaine et environnementale et pour la réorganisation du système métropolitain. Sa superficie est d'environ quatre vingt douze hectares d'anciennes friches industrielles entre la confluence de deux fleuves qui lui ont donné son nom, le Tejo et le Trancão. Le site a été transformé de façon significative, mais le concepteur a insisté sur le maintien des liens avec le passé à l'aide de connotations symboliques en forme et en fonction. Le nouveau parc est un espace d'une grande valeur esthétique qui rassemble les utilisations traditionnelles d'un espace public avec des fonctions pédagogiques et de loisirs, tous écologiques à l'égard de l'environnement, démontrant ainsi la réhabilitation d'une zone polluée. Le Parco di Tejo e Trancão constitue une interprétation et une synthèse brillantes des meilleures caractéristiques de nouveaux grands espaces publics dans nos villes contemporaines, en respectant en même temps les objectifs durables, écologiques et économiques. Les limites initiales ont été transformées en incitations pour une recherche formelle dans la conception du paysage incorporant des principes et des techniques de l'écologie environnementale.

Siinse 1998. a. Expo sektoriplaani osana valminud projekti lähtekohaks on 1994. a. korraldatud rahvusvaheline konkurss, mille võitis San Francisco maastikuarhitektuuri stuudio Hargreaves Associates. Loodud park oli üks strateegilisi sekkumisi, mida linnavalitsus toetas eesmärgiga parandada linna ja linnakeskkonna olukorda ning korraldada ümber linnasüsteem. Selle pindala on ligikaudu üheksakümmend kaks hektarit, mis varem oli tööstus- või tühermaa, ning see asub Tejo ja Trancão jõgede vahel, olles saanud nendelt ka oma nime. See piirkond on oluliselt muutunud, kuid samas on projekteerija püüdnud säilitada ka seoseid minevikuga, kasutades vormilisi ja funktsionaalseid sümboleid.

Lyon Confluence

1. Introduction

The inhabitants of Lyon have always lived in close contact with their capricious, untamed river, the Rhone. They are still near it today but the bond has weakened. In the absence of vegetation, an increasing number of cars park on the concrete banks, monopolize public space and obstruct access to the river. The reconquest of the east Rhone has begun and, with it, the identity of the city of Lyon. The spaces bordering the river are changing completely, reflecting the evolution of life and habits downtown. Innovations in architecture and landscape are needed to brighten up the city and to improve the quality of life.
The City of Lyon, an international crossroads, is remarkable in that it is located on the confluence of the Rhone and the Saone. It is for this reason that the city, with groups of architects, town planners and landscape designers, wanted to upgrade the areas at the meeting point of these two large French rivers, previously occupied by industries directly related to harbour traffic. This project is part of a broader scheme for Lyon, called "Plan Bleu", which aims to reach the river again and create another park "Parc Miribel Jonage", described on a separate sheet. The Lyon Confluence project thus uses the point, naturally created by the meeting of the Rhone and the Saone, to connect the parks directly with each other and with the water. This unusual configuration makes the site exceptional.

GENERAL INFORMATION	
Case Title:	Lyon Confluence
City:	Lyon
Country:	France
Region:	Rhône-Alpes
Population:	2 000 000
Name of the river:	Rhône and Saône
Contacted organisations:	SALEM Lyon Confluence
Postal address:	28 rue Casimir Perier 69002 Lyon
Tel, fax, e-mail:	Tel: 04 78 38 74 00 Fax: 04 78 38 74 11- E-mail: info@lyon-confluence.fr
Names of contacts:	Denis Courtot Tel: 04 78 38 74 03 E-mail: dcourtot@lyon-confluence.fr

2. Method

The initial 1998 studies recognised the importance of the parks and water in establishing a new relationship between citizens, nature in the city and the rivers and set out to be a 21st century model. They studied the establishment of easily flooded meadows on the banks of the Rhone and the potential for footpaths, a marina and a river basin. It was noted that green and blue are essential colours to the Lyon Confluence project and that the creation of a marina is its strong point.
Lyon already has large, important parks, but the Confluence park is radically different because it has to adapt to the natural form of the site, a special space initially benefiting the inhabitants of the district. The site is on the two rivers and will therefore entail a mixture of the identities and characteristics of both of them: on one side the Saone, gentle, calm and curvilinear with the more impetuous, rectilinear Rhone on the other. New spaces will be established progressively as the old installations disappear so as not to devastate the whole site at once.
Planting will allow a transverse view into the park, creating an open space and playing on transparency.
Lastly, the motorway has been diverted and a boulevard with crossroads and traffic lights has been designed to reduce the traffic volume, together with a raised planted walk for pedestrians and cyclists on the Perrache dock.
The Lyon Urban Community has contributed 26%, as has the City of Lyon. Other partners such as banks support the project.

Aerial view of the site of the Lyon Confluence park (source: www.lyon-confluence.fr)

SOURCES USED	
Website:	www.lyon-confluence.fr
Publication:	Notes available on website
Plan:	See plans
Project:	Lyon Confluence
Magazine:	-
Newsletter:	See website www.lyon-confluence.fr
Other:	-

3. Objectives

The objective of the Lyon Confluence project is to create a special space on a remarkable site: the confluence of the Rhone and the Saone. The marina is intended to become a nautical focal point, bringing the harbour environment into the urban fabric, but it must be carefully planned because of the limited space available. One of the great ambitions of the project is to restore a real bond between the Confluence and the rest of the city. The marriage of the identities of the two rivers concerned, the symbolism of the confluence and of the mingling currents must inspire the urban forms within the site.
The first idea was that of a ramified park starting from a green walk skirting the Saone. The branching park, perpendicular to the Saone, includes a number of passages between the city, the port and the river. The park-river ratio does not ignore the city but sets out to include it in an original city-river-port relationship. The aim of this proposal is to multiply areas of contact and linear frontages between housing and the park.
Another objective is to rationalize circulation in the area by reducing movement and by restricting circulation to separate spaces.

4. Results obtained

Results will be evident after completion of the first stages, planned for 2005 and 2007.

Plan of the site of the Lyon Confluence park (source: www.lyon-confluence.fr)

5. Comments

The Lyon Confluence project is perfectly integrated into the Riverlinks vision because its acknowledged and uncontested goal is to arouse the inhabitants' desire to reconquer the Confluence space. It involves the upgrading of the industrial wastelands and access to the south of the peninsula by improving the public transport network. It will become part of the downtown area of Lyon, so the project truly encourages the population to rediscover its privileged relationship with water and nature.
The novelty of the project is that it deals with two rivers at the same time, the Rhone and the Saone, which a priori was not easy considering how different these two rivers are. It draws on excellent French experiments such as Strasbourg, with the Jardins des Deux rives which links Strasbourg to Kehl in Germany, or Bordeaux, whose Plan Garonne project concentrates on the reconquest of the banks of the river.
The Lyon Confluence project also has an ecological dimension since the banks of the rivers show marked biological diversity. If reconstitution seems utopian on the banks of the Saone, it is not absurd to consider it in a protected space where natural forms related to water can return as part of the symbolic system of the confluence. The presence of water on the site will also demonstrate the flow pattern of rain water, and of course water will also be used in its most urban form, in fountains in public squares.

The confluence point (source: www.grandlyon.com)

6. Synthesis sheet

Case	High	Medium	Low	Absent
Services, historic boats				*
Cafés, restaurants	*			
Harbours and marinas		*		
Parks and promenades	*			
Cycle routes	*			
Sports activities	*			
Artificial lighting systems		*		
Theatres, museums, science centres	*			
Water quality measures		*		
Water management options	*			
Housing and offices	*			
Reduced motorised traffic, parking		*		
Integrated masterplan				*
Art and sculptures	*			
Temporary markets and festivals	*			
Facilities for children, the elderly and disabled	*			

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Summaries

L'obiettivo del progetto "Lyon Confluence" è quello di creare uno spazio speciale in un sito rimarchevole: la confluenza del Rodano con la Saone. La marina intende divenire un punto focale nautico, inserendo l'ambiente del porto nel tessuto urbano, ma deve essere progettata con attenzione a causa del limitato spazio disponibile. Una delle grandi ambizioni del progetto è quello di ripristinare un legame reale fra il Parco della Confluenza e il resto della città. Lo sposalizio delle identità dei due fiumi interessanti, il simbolismo della confluenza e delle correnti che si mischiano devono ispirare le forme urbane all'interno del sito. Lione ha già altri parchi grandi e importanti, ma il Parco della Confluenza è radicalmente differente perché deve adattare alla forma naturale del sito, uno spazio speciale di cui inizialmente beneficiavano gli abitanti del distretto. La disposizione degli alberi consentirà una vista trasversale nel parco, creando uno spazio aperto e giocando sulla trasparenza. In ultimo, la via d'acqua è stata deviata e un boulevard con incroci a semafori è stato disegnato per ridurre il volume del traffico, insieme ad un sentiero rialzato e alberato per pedoni e ciclisti sul molo Perrache.

Das Ziel des LYON CONFLUENCE-Projektes ist es, einen einzigartigen Raum an einem bemerkenswerten Ort, dem Zusammenfluss von Rhone und Saone zu schaffen. Die Bootshafenanlage soll "ein nautischer Brennpunkt" werden, der die Atmosphäre des Hafens in das städtische Gefüge hereintragen soll, jedoch behutsam wegen des begrenzten Raumangebotes geplant werden muss. Eine der wesentlichen Ambitionen des Projektes ist die Wiederherstellung einer wirklichen Verbindung zwischen dem Zusammenfluss von Rhone und Saone und der Stadt. Die Vereinigung der Identitäten der zwei Flüsse, der Symbolgehalt des Zusammenflusses und der sich vermischenden Strömungen soll die urbanen Strukturen innerhalb diese Gebietes inspirieren.
Lyon besitzt schon ausgedehnte und bedeutende Parke, jedoch ist der CONFLUENCE-Park vollkommen verschieden davon: Er muss sich der natürlichen Situation des Ortes anpassen und eine besonderen Raum schaffen, der zunächst den Bewohnern des Stadtteils Vorteile bringt. Die Bepflanzung wird diagonale Sichtbeziehungen ermöglichen und damit Freiräume schaffen und "spielerisch" Durchlässigkeit herstellen.
Zuletzt wurde – um das Verkehrsaufkommen zu reduzieren – eine stark befahrene Straße verlegt und ein Boulevard mit Kreuzungen und Signalanlagen sowie bepflanzten Wegen für Fußgänger und Radfahrer gestaltet.

El objetivo del Proyecto de Confluencia de Lyon es crear un espacio especial en un lugar notable: la confluencia del Ródano y el Saone. Se pretende que el puerto deportivo se convierta en un punto central náutico, aportando un ambiente portuario al tejido urbano, pero debe planearse con cuidado porque el espacio disponible está limitado. Una de las mayores ambiciones del proyecto es restaurar la unión real entre la Confluencia y el resto de la ciudad. El matrimonio de las identidades de los dos ríos concernientes, el simbolismo de la confluencia y de las actuales corrientes debe inspirar las formas urbanas dentro del lugar. Lyon ya cuenta con grandes e importantes parques pero el parque de la Confluencia es radicalmente distinto ya que tiene que adaptar a la forma natural del lugar, un espacio especial inicialmente beneficioso para los habitantes del distrito. La vegetación permitirá una visión transversal del parque, creando un espacio abierto y jugando con la transparencia. Por último, la autopista ha sido desviada y se ha diseñado un boulevard de cruces y semáforos para reducir el tráfico junto con un paseo de vegetación alta para peatones y ciclistas en el muelle de Perrache.

L'objectif du projet Lyon Confluence est de créer un espace privilégié au sein d'un site remarquable: la zone de confluence entre le Rhône et la Saône.
Le port de plaisance est destiné à devenir une halte nautique, autour de laquelle les conditions par lesquelles l'ambiance portuaire pourra diffuser à l'intérieur du tissu urbain doivent être mises en place de manière efficace, justement en raison de l'espace limité mis à disposition.
L'une des grandes ambitions du projet consiste à rétablir des liens réels et forts entre la Confluence et le reste de la ville. Le mariage des identités des deux fleuves concernés, la symbolique de la confluence et le mélange des courants doivent inspirer les formes urbaines au sein du site.
Lyon dispose déjà de parcs de taille importante, mais celui de la Confluence est radicalement différent car il doit s'adapter à la forme naturelle du site et doit constituer un espace privilégié profitant aux habitants du quartier.
La végétation est agencée de manière à assurer une vue transversale à l'intérieur même du parc, en créant un espace aérien où joue la transparence. Enfin, le tracé de l'autoroute est dévié et un boulevard avec carrefours et feux de trafic afin de réduire le volume de la circulation est accompagné d'une promenade végétalisée pour piétons et cyclistes sur le quai de Perrache.

Lyoni liitumiskoha projekti eesmärk oli luua Rhone ja Saone jõgede liitumiskohale midagi erilist. Sellest alast peaks saama merenduse keskpunkt, kus sadamakeskkond sulandub linnakeskkonnaga, kuid selle planeerimisel tuleb olla hoolikas, sest olemasolev ruum on piiratud. Projekti üheks ambitsiooniks on taastada tegelik side jõgede liitumiskoha ja linna vahel

Lyon Parc Miribel

*1. Introduction_*

The Miribel Jonage Park was selected in 1996 by the European Community for an ambitious programme of restoration of the natural environment. At the beginning of the 1990s a policy of total restoration began in this suburban space of 2,200 hectares with a strategic role and functions for the Lyon urban district. It was based on four priorities: the drinking water supply, protection against flooding, leisure and the safeguarding of the natural inheritance. The rehabilitation of the Miribel-Jonage Nature Park is still incomplete, but the program LIFE, which made it possible to begin the work and to rehabilitate natural environments, will have incontestably demonstrated some of the richness and potential of this extraordinary Park.
The Miribel-Jonage Nature Park is located at the north-east of the Lyon urban district, in the Rhone alluvial plain, and takes its name from its delimitation by the Miribel channel to the north and the Jonage channel to the south. Less than 15 kilometres from the centre of Lyon, served by two motorway exits, it extends over 11 communes and two departments and is one of the largest suburban parks in Europe. Continued control of the water between the end of the 19th and the beginning of the 20th century permitted the creation of this park on a formerly wild and unkempt site.
SYMALIM (the Joint Trade union for the Installation and the Management of the Leisure Park and the Miribel Jonage Lake) purchased the territory in 1968 and began work at an intensive pace, creating vast lakes for leisure. In 1988 an auxiliary pumping station was created in the main lake so that Lyon could have an alternative drinking water resource. The Park was co-financed for an amount of 1,894,941 Euros, of which 48% came from European funds, 28% from SYMALIM, 15% from the Rhone-Alps region, 9% from the Corsica Rhone and the Mediterranean Water Agency. Work supervision was entrusted to SEGAPAL.

GENERAL INFORMATION	
Case Title:	Miribel-Jonage Park
City:	Lyon
Country:	France
Region:	Rhône-Alpes
Population:	2,000,000 inhabitants in the urban district
Name of the river:	Rhône, alluvial plain
Contacted organisations:	Parc Nature de Miribel-Jonage Chemin de la Bletta 69120 Vaulx-en-Velin Tél: 33 (0) 4 78 80 30 67 Fax: 33 (0) 4 72 04 07 95
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Names of contacts:	M. Martinet, general manager

2. Method

The development of the Miribel-Jonage Nature Park contributed to the rehabilitation of the site in various sequences of installations.
The artificial lakes were one of the features dealt with: the old gravel pits were renaturalised for their biodiversity and for environment education. The Grands Vernes was a very degraded peninsula, whose position on the edge of the leisure zone offered great natural potential to the public. The intermediate water levels are three lakes which could be developed as transitional spaces, used for leisure and ecology as well as hydraulics.
The natural environments upstream of the Park also needed to be restored and managed, for their biodiversity and the hydraulic system. Degraded areas were converted into alluvial forests or dry meadows. Scrub was controlled in the meadows and marshes. Old branches of the Rhone were covered to let flood water flow away.
Motorised access is limited, but better managed, in particular by improved signposting. The development of the environment includes the creation of discovery trails, the installation of beaches, or of cycle and pedestrian tracks. Many services were also created for visitors (restoration, information, sign posts, etc.).
The natural sectors are preserved in this way, particularly the old Rhone, but also the afforestation of the peninsula making important oases. The most degraded zones (infill sites, dumps, basins for washing gravel) were completely transformed to form islands and marshes. The equipment for treating materials were removed from the site, together with all the scrap and concrete. The installation of a specific site organization made the restoration of the Grands Vernes and the intermediate water levels possible.

SOURCES USED	
Website:	www.parc-miribel.fr
Publication:	Plates published by the administrative organization available on
Plan:	See plans attached
Project:	Miribel-Jonage Park
Magazine:	-
Newsletter:	See website: www.parc-miribel.fr
Other:	-

3. Objectives

Conscious of the need for action, the SYMALIM and its partners adopted a charter of objectives in 1993 with a master plan which is still being used for the management of the site. The charter emphasised the need to reconcile the site's many possibilities in a general plan of development and long-term management. Four priority uses were defined for the Park: preserving the drinking water resource, restoring the flood basins upstream, protecting the natural resources, developing open air pastimes.
The management principles aim to satisfy all four uses which means inventing a new type of territory - a suburban nature reserve balancing the needs of leisure and nature. To achieve this goal, the leisure areas are carefully graded from the west towards the natural environments to the east of the site.
The four objectives described here often seem to be conflicting and a sectoral management of the space led to clashes and a degradation of the natural environment. The Park project thus aims at finding a balance, even a synergy between these various functions. It is the role of the LIFE programme which aims to restore degraded areas for the four objectives. It is a question of arranging leisure and natural spaces, while paying careful attention to the central area of the park, very degraded but with a crucial pivotal role.

4. Results obtained

The main objectives of the project have been largely achieved, though they evolved with time. Ecological management had to partially give way to the needs of the public.
The Miribel-Jonage Nature Park has achieved excellent results with the public with its 2,200 hectares, including 350 hectares of water surfaces, 230 species of birds, 25 species of mammals, 800 species of listed plants,15 marked routes and 4 supervised beaches, because it attracts 3,500,000 visitors a year. This park thus became the fourteenth attraction in France.
The natural environments are increasing and the number of species of Community interest has stabilized thanks to the LIFE programme in particular. Moreover, 50 hectares of river banks were restored against only 10 envisaged at the beginning, marshes were created in the gravel pits over more than ten hectares. The objective of supplying water to 5 kilometres of old river branches was achieved as was the preservation of all the natural meadows. 5 hectares of arable lands were reconverted into natural meadows, and 5 hectares of forest cut down in the alluvial plain. However, the Forest marsh was not created, and the management of the natural meadows has only been partially achieved.
Finally 1,200 hectares were protected from motorized circulation and information for the public in the natural environments was put in place. There was also an improvement in environmental education, particularly using animation or exhibitions.

5. Comments

The development of the Miribel-Jonage Park is very close to the objectives of the European Riverlinks project, because it is has transformed the Rhone alluvial plain into an attractive, popular site, but where respect for the environment and the improvement of water are the main ideas.
The promoters of the Miribel-Jonage Park decided to integrate some of the original activities such as gravel extraction, which had originally caused plant loss and erosion, to the advantage of the site, suggested by the Mixed Trade union

for the installation and the management of the Miribel-Jonage park. The extractors then took part in the rehabilitation and the restoration of the site, and the activity of extraction no longer had an industrial purpose but became a tool of valorisation.

There is a wish to evolve the image of the Miribel-Jonage park, too often associated with a leisure park. Publicity concentrates on making the park and its potential better known in the community, with the administration and associations important for its future. Advertising to attract the public remains modest until the space is better managed.

Significant means were also deployed to make the project known outside the Lyon urban district, to share the lesson of this experiment of restoration of the natural environment and to establish professional networks.

6. Synthesis sheet

Case	High	Medium	Low	Absent
Ferry services, historic boats		*		
Cafés, restaurants	*			
Harbours and marinas				*
Parks and promenades	*			
Cycle routes	*			
Sports activities	*			
Artificial lighting systems			*	
Theatres, museums, science centres			*	
Water quality measures		*		
Water management options	*			
Housing and offices				*
Reduced motorised traffic, parking		*		
Integrated masterplan			*	
Art and sculptures			*	
Temporary markets and festivals	*			
Facilities for children, the elderly and disabled	*			

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Summaries

Lo sviluppo de parco naturale Miribel-Jonage ha contribuito alla riabilitazione del sito in successive fasi. I laghi artificiali furono uno dei problemi affrontati: le vecchie cave di pietrisco furono "rinaturalizzate" per la loro biodiversità e a scopo di educazione ambientale. Le Grand Vernes erano una penisola molto degradata, la cui posizione al margine della zona ricreativa offriva al pubblico un grande potenziale naturale. I tre laghi mediani furono sviluppati come spazi di transito, utilizzati per il tempo libero e l'ecologia, ma anche a fini idraulici. Quattro gli usi prioritari della struttura: preservare la riserva di acqua potabile, restaurare i bacini di piena, proteggere le risorse naturali, sviluppare attività all'aria aperta. La gestione mira a soddisfare tutti e quattro gli usi, il che significa inventare un nuovo tipo di territorio: una riserva naturale suburbana che bilanci il bisogno di divertimento e di natura. Per raggiungere questa meta, le aree destinate alla ricreazione sono attentamente graduate da ovest verso gli ambienti naturali ad est del sito.

Die Entwicklung des Naturparks Miribel-Jonage in verschiedenen Abschnitten trug zur Aufwertung des Gebietes bei.
Künstliche Seen waren eines der Merkmale dieser Entwicklung: Alte Kiesgruben wurden renaturiert, um einen Beitrag zur Erhaltung der Artenvielfalt und zugleich für die Umweltbildung zu leisten. Die ehemals verwahrloste Halbinsel Grands Vernes stellt wegen ihrer Randlage zur Erholungszone ein bemerkenswertes Naturpotential für die Öffentlichkeit dar. Drei zwischenzeitliche Seen wurden als Übergangsräume entwickelt werden; sie erfüllen zugleich Erholungs-, ökologische als auch wasserwirtschaftliche Funktionen.
Vier prioritäre Nutzungen bzw. Funktionen wurden für den Park festgelegt: Trinkwasserschutz, Wiedergewinnung von oberstromig gelegenen Retentionsräumen, Naturschutz und Erholung. Die Bewirtschaftungsprinzipien zielen darauf ab, alle vier Funktionen zu erfüllen. Das bedeutet die Erfindung eines Territoriums „neuen Typs" – ein suburbanes Naturreservat, das die Bedürfnisse von Erholung und Natur ausbalanciert. Um dieses Ziel zu erreichen, wurden die Erholungsgebiete sorgfältig gestaffelt im westlichen Teil angelegt und gegenüber den Naturgebieten im östlichen Teil abgegrenzt.

El desarrollo del parque Natural Miribel-Jonage contribuyó a la rehabilitación del lugar en distintas fases. Los lagos artificiales fueron uno de los elementos tratados: los antiguos fosos de grava fueron renaturalizados para su biodiversidad y para la educación medioambiental. La Grands Vernes era una península muy degradada cuya posición en el límite de la zona de ocio ofrecía un gran potencial natural al público. Los tres lagos intermedios se desarrollaron como espacios de transición, utilizados para el ocio, la ecología y temas hidráulicos. Se definieron cuatro usos prioritarios para el parque: conservación del recurso del agua potable, restauración de las cuencas de inundación río arriba, protección de los recursos naturales y desarrollo de los pasatiempos al aire libre. Los principios de gestión pretenden satisfacer los cuatro usos, para lo que hay que inventar un nuevo tipo de territorio: una reserva natural suburbana que equilibre las necesidades de ocio y de naturaleza. Para conseguir esta meta, las zonas de ocio están cuidadosamente niveladas y clasificadas desde el oeste hacia los ambientes naturales del este.

L'aménagement du Parc Naturel Miribel-Jonage a contribué à la remise en valeur du site par une série d'implantations. Parmi les particularités traitées figuraient les lacs artificiels. Ces anciennes gravières ont été re-naturalisées pour leur biodiversité et pour la pédagogie environnementale. Les Grands Vernes formaient une presquîle très dégradée dont la situation au bord de la zone de loisirs offrait un énorme potentiel naturel pour le public. Les trois lacs intermédiaires ont été aménagés comme espaces de transition, utilisés pour les loisirs, l'écologie et l'hydraulique. Quatre utilisations prioritaires ont été définies pour le Parc: la préservation des ressources en eau potable, la restauration des bassins de crue en amont, la protection des ressources naturelles, et l'aménagement des loisirs au grand air. Les principes de gestion visent à répondre à l'ensemble de ces quatre utilisations, ce qui nécessite l'invention d'un nouveau type de territoire – un parc naturel dans l'agglomération avec un équilibre judicieux entre les besoins des loisirs et de la nature. Pour y arriver, les zones de loisir sont soigneusement aménagées à partir de l'ouest vers les environnements naturels à l'est du site.
Miribel-Jonage looduspargi arendamine aitas mitmes järgus kaasa selle piirkonna taaselustamisele.

Selle üheks osaks olid kunstjärved: vanad kruusakarjäärid taasloodustati bioloogilise mitmekesisuse saavutamiseks ja keskkonna-alase hariduse andmiseks. Grands Vernes oli äärmisel halvas seisus poolsaar, mille asukoht puhkeala serval omas sellegipoolest avalikkuse jaoks suurt looduslikku potentsiaali. Vahepealsed veetasemed koosnevad kolmest järvest, mida on võimalik arendada kui üleminekuruumi ning kasutada nii puhkamise, ökoloogia kui hüdraulika eesmärkidel.

Padova

1. Introduction

The vital relationship of Padua's water system with the agricultural landscape, open spaces and the city has been compromised and has deteriorated during the transformation and growth of urban development, as in many other cities. The structure of the old hydrographic network has changed both in the historic city centre and the suburbs, particularly with the covering of the waterways, already started in the nineteenth century and continued until the 1950s. The covering of the canals crossing the city has profoundly altered the structure and the image of the old city which has lost many of the connotations of its original name "city of waters".
The damage was not only aesthetic, it also affected the environmental functions of oxygenation, metabolism and ecological stabilisation which river banks should have in an urban context. This is accompanied by functional and cultural impoverishment due to the progressive disappearance of river navigation and consequently "river trades", as well as the direct link between citizens and their river.
The "*Project for the restoration and development of the river network and interconnecting public open spaces*" was begun by the municipal administration at the beginning of the 1990s and covers all the Paduan area between the Brenta and Bacchiglione rivers. In particular it deals with the city's two rivers, North and South, in contact with the regional and provincial protected areas at the East and West. The two rivers are linked twice: once by the Brentella canal to the east, the other by the Battaglia canal to the west which encircles the old city centre and joins the Brenta. This external system is linked to the entire canal network and most of the public open spaces inside the city which are touched by the two main rivers or by the two connecting canals.

Paths along the banks of the external waterways (source: Padua Municipality, Parks Department)

GENERAL INFORMATION	
Case Title:	Restoration and development of the river network and interconnecting public open spaces
City:	Padua
Country:	Italy
Region:	Veneto
Population:	209.632 inhabitants by 31/12/2002
Name of the river:	Brenta and Bacchiglione rivers with canals inside the city (Brentella, Piovego, Roncaiette, Alicorno, Battaglia, internal Naviglio, etc.)
Contacted organisations:	-
Postal address:	-
Tel, fax, e-mail:	-
Names of contacts:	Dott. Giampaolo Barbariol (Director of Open Spaces, Parks, Gardens and Street Fittings, Padua Municipality)

SOURCES USED	
Website:	-
Publications:	Regional agency for environmental prevention and protection in the Veneto region (edited by), Primo rapporto sullo stato dell'ambiente a Padova, Padua 2002. Debiasio Caimani Luisa (edited by), Padova. Il verde urbano: riconversione ecologica della città, Piccin, Padua 1996. Gambino Roberto, Le acque come struttura portante del verde, in Luisa Debiasio Caimani (edited by), Padua. Il verde urbano: riconversione ecologica della città, Piccin, Padua 1996, pp. 48-69.
Plan:	-
Project:	Masterplan of Town Planning Project for Isonzo Parco del Basso, drawn up by Paolo Castelnovi and Federica Thomasset Architecture studio, general consultant Prof. Roberto Gambino, 1994. Part of the project for the Piovego stretch between Porte Contarine and Roncaiette, drawn up by prof. Roberto Gambino with the architects Raffaella Gambino and Federica Thomasset, 1996.
Magazine:	-
Newsletter:	-

Conceptual scheme for open spaces in the Paduan area closely linked to the waterways which characterise the city (source: Padua Municipality, Parks Department)

2. Method

In spite of the fact that the relationship between open spaces and the water system has been taken into consideration since the first Land Use Plan in 1954 (the so-called "Piccinato Plan"), it was not until the beginning of the nineties that a series of studies including "the landscape and plant analysis, as well as an assessment of the accessibility of the internal canals, their relationship with the city's foot and cycle paths and a series of interventions to improve the state of conservation, use and visibility of the water network in the city to support the open space system" [1].
In particular the two studies assigned to Roberto Gambino (1994 and 1996) set out a new plan of action more relevant to the environment. The idea grew to form a system of public open spaces which take natural phenomena into account, particularly the water system: the Brenta which flows to the north and the Bacchiglione to the south, the Brentella canal which crosses the city from north to south and the series of canals surrounding and crossing the city; the same canals which form part of the fortifications, defending the city from invasion and at the same time supplying important communications with the Brenta and Venice.
The inevitable regional dimensions of the hydraulic problems emerged during these studies, conditioning the quality and availability of water in the city (from scarcity to a persistent flood risk and the serious state of water pollution) and their strict dependence on the malfunctioning of the whole Paduan "hydraulic machine" due to the imposing urban and regional transformation still continuing today.
Research concluded with the "*Restoration and development project for the city's river network and the interconnecting public open spaces*" which showed how the water system still constitutes the ecological basis useful to redress environmental balance in the city as well as representing an historic aspect of Paduan territory, in spite of its serious mutilation. This revealed the need for an integrated approach to consider the waterways and open spaces in context, not only to reassess their ecological, landscape and environmental role within the city and its regional context, but also to regulate future transformations and restore legibility and familiarity to the whole Paduan territory.

3. Objectives

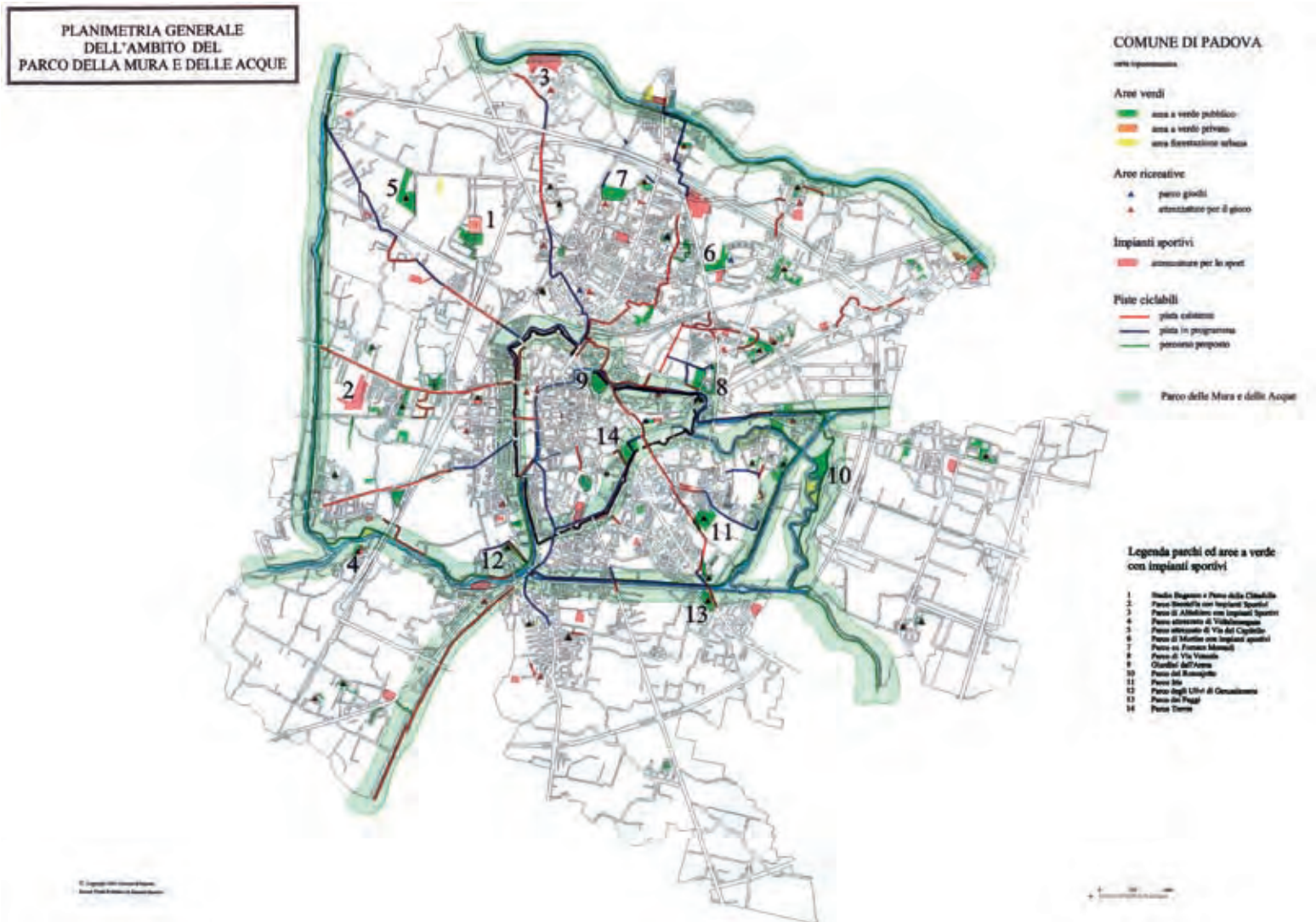
The main objective of the plan is ecological resuscitation in the city, for which the plan proposes to:

- Restore legibility and familiarity to the inhabited areas;
- Retrieve memories and cultural evidence;
- Upgrade public open spaces by adding areas equipped for play, sport and leisure time;
- Give the river network a regulatory spatial role for future transformations;
- Give back space to the waterways;
- Create overspill basins;
- Restore several essential connections by reopening visual corridors and eliminating barriers and obstructions to these or to access between the city and its waterways.

The plan specifically proposes:

- A basic structure consisting of two rivers, the Brenta and the Bacchiglione, conceived as continuous linear areas representing a return to nature as far as is compatible with any elements that cannot be modified and the requirements of water management;
- Two canals connected to the main rivers, one opening onto the countryside along the Brentella and one, leading from the Battaglia canal to the old city centre and from there to the Brenta;
- A system of public open spaces and sports facilities in direct connection to the two main rivers and their connecting canals;

[1] Town Council Resolution 16/11/1995.



Plan of the City Walls Park and waterways (source: Padua Municipality, Parks Department)
Padua Municipality: Open spaces: public, private, urban reforestation; Recreation areas: playgrounds, play equipment; Sports grounds: sports equipment; Cycle tracks: existing tracks, programmed tracks, proposed tracks; Key to the parks and open spaces with sports facilities

– A minor network of foot and cycle paths.

Altogether, the project is "an open network of interconnecting opportunities" [2] giving particular visual and functional emphasis to the Brenta and Bacchiglione rivers and the old city centre. This influences the selection of connecting paths which must guarantee access to the main features of the system, contributing to the legibility and familiarity of the main river, using some of the proposals already considered by the Municipal Administration.

Roberto Gambino has drawn up a transitional plan for the built-up area with some powerful ideas for improvement. These are spaces whose strategic positions, density of cultural resources, and relevance to the transformation projects have great value and significance for the future of the city.

[2] R. Gambino, *Le acque come struttura portante del verde*, in L. Debiasio Caimani (edited by), *Padova. Il verde urbano: riconversione ecologica della città*, Piccin, Padova, 1996, p. 52.

The original landing place inside Treves Park (source: Padua Municipality, Parks Department)

4. Results obtained

The draft and the final project contained many ideas and suggestions already approved by the Town Council.
The projects most frequently implemented deal with the reclamation and development of combinations of "walls/open-spaces/waterways" within the old city. Padua's system of open spaces is linked to the fortifications which surround the city, mostly from the sixteenth century and well preserved, as well as to the waterways, rivers and canals.
One of the objectives of the project was how to restore this system. It gave rise to the idea of the *Walls and Waterways Park* following the river network, the canals and the city walls.

The park was divided into two sub-systems: the first consisting of the green core – the park adjacent to the city walls; the second related to the external rivers and canals.
The first system is very intensive consisting of popular gardens, parks and small spaces in the heart of the old city while the second is more extensive and environmental in character.
The Municipality is gradually carrying out these ideas in small sections: the park has been divided into various areas and links are being developed between the single tracts.

The Contarine Gates from Corso Garibaldi before the uncovering of the inner canal (source: Padua Municipality, Parks Department)

A series of interventions is being carried out to the south of the green core in particular; this begins at Treves Park, designed by Giuseppe Jappelli at the end of the nineteenth century, and extends to the Alicorno ramparts, part of the sixteenth century fortifications [3]. Further north work has begun on another very important sub-system; this leads from the Roman Arena gardens towards Venice. In this section the Municipality has "uncovered" the first stretch of canal now used as moorage for boats. These projects are a strong stimulus to uncover the canals for touristic reasons. For some years several navigation companies have already been offering a tourist shuttle service to connect Padua to Venice.
The Municipality has decided to use the canal system outside the city as a base for the construction of an urban and suburban ecological network. It works outside the canals because of the hydraulic difficulties which prevent afforestation and tree-planting in the canal bed; woods and gardens are being planted parallel to the rivers as well as naturalistic corridors to connect the inner areas.

[3] There are other important spaces between these two extremes: a garden with open-air classrooms created at the beginning of the twentieth century and the S. Giustina ramparts for which the restoration project includes the sixteenth century terraces and fortifications as well as the monumental aspects.

The rediscovery and restoration of the old water course allowed the internal canal to become navigable again (source: Padua Municipality, Parks Department)

5. Comments

The project tried to construct «a connecting system with the potent presence of water and embankments, to restore the frayed fabric which is no longer recognisable by reclaiming and rediscovering waterways and their banks» [4]. In particular, the importance of the embankments, «a recurring element in the landscape of the Venetian and Paduan plains» [5] has been one of the most visible aspects of the project; in fact rivers represent essential lines of continuity and are resources of fundamental ecological, landscape and social value.
The main aims of the project to recover the city's river network and the connected open spaces were to restore essential continuity, reopen surviving visual perspectives, eliminate barriers and obstructions which interrupt and spoil the visual and physical relationship between water and the city. The paths along the river banks and canals were conceived as "ecological corridors" in the city, elements to connect the city to the outskirts, the suburban quarters to each other and the city to the surrounding communities.
Other projectual and planning experiences were included in this long process of recovery and development of the river network with the contribution of citizens and, more recently, the forum of Agenda XXI, creating a much closer relationship with citizen's aspirations.

[4] L. Debiasio Caimani (edited by), *Padova. Il verde urbano: riconversione ecologica della città*, Piccin, Padova, 1996, p. 12.
[5] R. Gambino, *Le acque come struttura portante del verde*, in L. Debiasio Caimani (edited by), Padova, 1996, p. 50.

6. Synthesis sheet

Case	High	Medium	Low	Absent
Ferry services, historic boats	*			
Cafés, restaurants				*
Harbours and marinas			*	
Parks and promenades	*			
Cycle routes	*			
Sports activities			*	
Artificial lighting systems			*	
Theatres, museums, science centres				*
Water quality measures			*	
Water management options		*		
Housing and offices		*		
Reduced motorised traffic, parking			*	
Integrated masterplan		*		
Art and sculptures				*
Temporary markets and festivals			*	
Facilities for children, the elderly and disabled		*		

Auditor:
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Organisation:
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Summaries

Il progetto riguarda il recupero e la valorizzazione del sistema "mura-verde-acque" nella città storica di Padova.
Il sistema del verde di Padova, infatti, è legato non solo alla rete di acque, di fiumi e di canali ma anche alla presenza di un poderoso sistema fortificato, in gran parte costituito dalla cinta Cinquecentesca ancora ben conservata, e che circonda la città. La caratteristica del sistema idrografico è che esso è in gran parte pensile, cioè costituito da corsi d'acqua in prevalenza rettilinei, completamente privi di vegetazione arborea e quindi poco propizi alla vivibilità urbana e sociale. Riconvertire i canali artificiali, nati per il trasporto, per la navigazione o per permettere lo scarico in caso di piena, in ambiti che abbiano una più marcata valenza paesaggistica e ricreativa è stato uno degli obiettivi del progetto. Da qui è nata l'idea del Parco delle mura e delle acque che si appoggi sulla rete dei fiumi, dei canali e delle mura cittadine.
Il parco è stato pensato come definito in due sottosistemi: il primo costituito dal cuore verde che corrisponde al parco delle mura vero e proprio, ovvero a tutte le zone che circondano le mura storiche cittadine; il secondo costituito invece dai fiumi e dai canali esterni. Il primo sistema, è di tipo intensivo, creato dall'articolazione di giardini, parchi e piccoli spazi aperti del centro storico intensamente vissuti e animati; il secondo sistema invece è di tipo estensivo, determinato da un verde di carattere ambientale.
Il Comune sta dando attuazione a questa idea per piccoli comparti.

Das Projekt beschäftigt sich mit der Wiederherstellung und Entwicklung von Kombinationen der städtebaulichen Elemente "Mauern", "Freiräume" und "Gewässer" innerhalb der Altstadt. Das Freiraumsystem von Padua wird verbunden sowohl mit den die Altstadt umgebenden Befestigungsanlagen (zumeist aus dem 16. Jahrhundert und gut erhalten) als auch Gewässern und Kanälen. Eine der Zielstellungen des Projektes war, wie dieses System erhalten und ein Walls and Waterways Park (Mauer – und Gewässer – Park) geschaffen werden kann, der dem Netzwerk der Gewässer, den Kanälen und den Stadtbefestigungen folgt.
Die hauptsächlichen Ziele waren die Erhaltung der Kontinuität, die Wiedereröffnung Blickbeziehungen, die Entfernung von Barrieren und anderen Hindernissen, die die visuelle und physische Beziehung zwischen Wasser und Stadt unterbrechen und zerstören. Die Wege entlang der Flussufer wurden als "ökologische Korridore" in der Stadt angelegt, um die Innenstadt mit den Außengebieten und dem Stadtrand, die vorstädtischen Quartiere untereinander und die Stadt mit den umgebenden Gemeinden zu verbinden.

Ce projet porte sur la réappropriation et l'aménagement de combinaisons de "murs – espaces – voies d'eau" au sein de la vieille ville. Le système de grands espaces de Padoue est lié aux fortifications qui entourent la ville dont la plupart datent du 16ème siècle et sont bien préservées, et aux voies d'eau, rivières et canaux. L'un des objectifs était de trouver le moyen de restaurer ce système et de créer un Parc des Murs et des Voies d'Eau qui suit le réseau des rivières, des canaux et des murs de la ville. Les buts principaux étaient de restaurer l'essentiel de la continuité, d'éliminer les barrières et les obstructions qui coupaient et gâchaient le rapport visuel et physique entre l'eau et la ville. Les chemins le long des rives et des canaux ont été conçus comme des «couloirs écologiques» dans la ville destinés à relier la ville à l'agglomération, avec une interconnexion entre les banlieues et entre la ville et les communes environnantes.

Este proyecto trata del saneamiento y desarrollo de combinaciones de "murallas/espacios abiertos/vías fluviales" dentro del centro histórico de la ciudad. El sistema de Padua de sistemas abiertos está relacionado con las fortificaciones que rodean la ciudad, la mayor parte de ellas del S. XVI y bien conservadas, así como con las vías fluviales, ríos y canales. Uno de los objetivos era cómo restaurar el sistema y crear un Parque de Murallas y Vías Fluviales siguiendo la red fluvial, los canales y las murallas de la ciudad. Los principales objetivos eran restaurar la continuidad esencial, recuperar las perspectivas visuales supervivientes y eliminar las barreras y obstáculos que interrumpían y arruinaban la relación visual y física entre el agua y la ciudad. Los caminos, a lo largo de las orillas del río, y los canales se concibieron como "corredores ecológicos" de la ciudad, elementos que conectaban a la ciudad con la afueras, los barrios suburbanos entre ellos y la ciudad con los municipios cicundantes.

Kõige sagedamini tegelevad projektid vanalinna "müüride/avatud ruumide/veeteede" taastamise ja arendamisega. Padua avatud ruumide süsteem on seotud linna ümbritsevate kindlustustega, mis valdavalt pärinevad 16. sajandist ja on hästi säilinud, samuti veeteede, jõgede ja kanalitega.
Üheks projekti eesmärgiks oli uurida, kuidas oleks võimalik seda süsteemi taastada. Sellest sündis müüride ja veeteede pargi idee, mille kohaselt rajatav park peaks järgima jõgedevõrku, kanaleid ja linnamüüre.
(Footnotes)
1 Town Council Resolution 16/11/1995.
2 R. Gambino, Le acque come struttura portante del verde, in L. Debiasio Caimani (edited by), Padova. Il verde urbano: riconversione ecologica della città, Piccin, Padua 1996, p. 52.
3 There are other important spaces between these two extremes: a garden with open-air classrooms created at the beginning of the twentieth century and the S.Giustina ramparts for which the restoration project includes the sixteenth century terraces and fortifications as well as the monumental aspects.
4 L. Debiasio Caimani (edited by), Padova. Il verde urbano: riconversione ecologica della città, Piccin, Padua 1996, p. 12.
5 R. Gambino, Le acque come struttura portante del verde, in L. Debiasio Caimani (edited by), Padua 1996, p. 50.

Paris

1. Introduction

Paris Plage 2003 repeated the Parisian experiment of the previous year improving on the success achieved in 2002, particularly due to more favourable weather as well as increased efficiency in road deviations. The Paris Plage concept shows inventiveness on behalf of its initiators: the creation ex novo of a real beach in the heart of Paris, on the banks normally occupied by fast traffic for the rest of the year. The beach extends for three kilometres along the Seine between the Pont des Tuileries and Port Henri IV.
The "beaches" are made of wood, lawn or sand. Different activities take place along the bank, offering the visitors useful and quality services such as eating places, sports facilities (climbing, taï chi...), rest and nap areas.
The embankments are connected to the subway and water bus in order to make Paris Plage easily accessible from many places in Paris. Several public services were involved in the plan: particularly the Paris Port authority, RATP (Independent Parisian Transport Corporation), SIIAP (Interdepartmental Trade Union for Sanitation in Paris and its suburbs), SAGEP (Paris Water Management Limited Company) and, of course, the City of Paris. Paris Plage uses the streets normally reserved for motor traffic, managed by VNF (French Inland Waterways) as public property on behalf of the State. The City of Paris temporarily managed this space by superimposing administration, requiring a royalty payment to the owner for the use of the territory.

GENERAL INFORMATION	
Case Title:	Paris Plage
City:	Paris
Country:	France
Region:	Ile-de-France
Population:	2,147,860 in Paris and more than 9,5 million including the suburbs
Name of the river:	Seine
Contacted organisations:	City of Paris
Postal address:	Hôtel de Ville 75196 PARIS
Tel, fax, e-mail:	-
Names of contacts:	M. Remy BOVIS, Direction des Espaces Verts Tel: 01 42 76 48 98 E-mail: remy.bovis@mairie-paris.fr

2. Method

It was a second edition but the organizers did not want to merely repeat the formula of the first. In order to improve on it so they decided to increase the services supplied for Paris Plage 2002. The quantity of sand was tripled to 3,000 tons, an additional sand beach was installed, making two rather than just one, and the surface of sand in the Town Hall square was doubled. Comfort was improved by increasing the furniture considerably: 300 deckchairs (twice as many as the previous year) as well as a lot of hammocks.
Many water-supply points, playgrounds for children and sports areas were added for visitors. A large number of plants, palm trees and rare plants were used to decorate the structures, lanes and access ramps. Musical events were organized, including a floating performance and a tribute to Django Reinhardt.
Lastly, information points, safety and medical services were increased and improved to be more welcoming, allowing access to people with reduced mobility.
The site was open round the clock and performances took place from 9 a.m. to half past ten in the evening.

SOURCES USED	
Website:	paris.fr; paris-ports.fr
Publication:	-
Plan:	-
Project:	-
Magazine:	Paris Plage booklet available at the tourist office
Newsletter:	See website
Other:	-

3. Objectives

The objectives were obviously touristic. Paris is one of the most visited cities in the world during the summer holidays but its geographical situation isolates it from the coast, a popular spot during the hot season. The creation of a beach in a city such as Paris is a godsend to be developed further, to increase the assets of the capital. It also encourages Parisians to stay in the city, so the economic repercussions of such a project are particularly interesting for the organizers.
The Paris Plage operation had a second advantage: the reduction of traffic in the city centre. The closing of the roads along the river banks encouraged regular motorists to use public transport rather than their own cars. However secondary routes were planned to skirt the roads along the river banks to guarantee an acceptable flow of traffic, which was not always the case in 2002. A reduction in circulation in the city centre during the summer is also beneficial for the environment, reducing air pollution, a problem common to all the large cities of the world, as well as contributing to the reduction of noise pollution and other harmful effects caused by traffic. Lastly, Paris Beach, by restricting the roads along the river banks to pedestrians, cyclists or roller-skaters, without danger, allowed Parisians and visitors to profit from easy access to the Seine.

4. Results obtained

Paris Plage 2003 was a greater success than the 2002 edition: more than three million people came to discover or rediscover the beach on the banks of the Seine compared to 2, 4 million the previous year. The majority of people came in the evening because of the record temperatures in France during summer 2003.
There was a significant reduction in road traffic, estimated at approximately 3% less than the previous year. Easier traffic movement was helped by the suggestion of alternative routes more effective than in 2002.

Paris Plage was initially intended for Parisians, as well as the "Francophiles" who do not go on holiday, and in 2003 managed to renew the popularity of the previous year. In all 15% of "Francophiles" and 33% of Parisians came to enjoy the banks of the Seine normally dominated by traffic. Twice as many tons of sand, parasols, sun-beds, water games, open spaces and playgrounds for children, picnic areas, as well as a library: the project in 2003 quantitatively and qualitatively improved the services offered to holiday-makers in response to specific requests made the year before. The addition of private sponsors made it possible to embellish the site and improve the animations while reducing costs for the Parisian community.

5. Comments

Paris Plage fits perfectly into the ambitious European Riverlinks project whose objective is to improve city-river relationships. It allows new and differentiated uses of the river and its banks, by creating an unexpected area right in the middle of the city: a real beach in the heart of Paris. Spaces for relaxation and leisure in direct relation with the river offer many possibilities of reappropriation of the river banks and make the area accessible to a large public. This project creates a holiday environment in the centre of Paris and allows the inhabitants to look at the river with new eyes: the aim is to attract attention to the river and to perceive its aesthetic and environmental richness.
Success depends on strongly integrated co-operation between all the public services participating (see above) in order to guarantee the safety of the site, maintenance and the respect of water as well as the banks, and the careful planning of the various activities carried out along the three kilometers of banks used for the occasion. This monitoring is all the more desirable now that the banks of the Seine are classified by UNESCO as a world inheritance site. The operation will be repeated in 2004, on the same site, from the Pont des Tuileries to the Pont Henri IV as shown in the plan below with yet more improvements on the last edition.

6. Synthesis sheet

Case	High	Medium	Low	Absent
Ferry services, historic boats	*			
Cafés, restaurants	*			
Harbours and marinas		*		
Parks and promenades	*			
Cycle routes	*			
Sports activities	*			
Artificial lighting systems	*			
Theatres, museums, science centres	*			
Water quality measures		*		
Water management options		*		
Housing and offices			*	
Reduced motorised traffic, parking	*			
Integrated masterplan	*			
Art and sculptures	*			
Temporary markets and festivals	*			
Facilities for children, the elderly and disabled				

Auditor
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Organisation: Direction des Espaces Verts
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Summaries

Si tratta della seconda edizione di Paris Place organizzata sulle rive della Senna. In questa edizione 2003 gli organizzatori non hanno voluto ripetere la stessa formula della precedente ed hanno deciso di potenziare i servizi offerti rispetto all'edizione Paris Plage 2002. La quantità di sabbia è stata triplicata e portata a ben 3000 tonnellate, oltre ad una quantità di sabbia da spiaggia aggiuntiva, sono state realizzate due spiagge e l'estensione della sabbia nella piazza del comune è stata raddoppiata. Sono stati migliorati i confort in modo significativo: 300 sedie a sdraio (il doppio della prima esperienza) così come molte amache. Molti punti con prese d'acqua, campi-giochi per bambini ed aree sportive. Un gran numero di piante, palme e piante rare, usate per decorare le strutture, i camminamenti e le rampe. Sono stati organizzati eventi musicali, performance sul fiume e un tributo a Django Reinhardt.

Es war schon die zweite "Auflage", aber die Organisatoren wollten nicht lediglich das Konzept der "Premiere" wiederholen. Um es zu verbessern, wurde das Angebot an Dienstleistungen und Attraktionen für den "Pariser Strand" erweitert. Die Sandmenge wurde auf 3.000 Tonnen verdreifacht, ein zusätzlicher zweiter Sandstrand wurde angelegt und die Sandfläche auf dem Rathausplatz verdoppelt. Der Komfort wurde beträchtlich durch 300 Liegestühle (doppelt so viele wie im Vorjahr) und viele Hängematten verbessert.
Zahlreiche Wasserzapfstellen, Kinderspielplätze und Sportflächen wurden für die Besucher bereitgestellt. Eine große Anzahl an Pflanzen, Palmen und anderen Gehölzen wurde zur Dekoration der Strukturen, Wege und Zugangsstellen verwendet. Musikalische Darbietungen einschließlich Performances auf der Seine und ein Revival-Konzert zu Ehren von Django Reinhardts wurden veranstaltet.

S'agissant de la deuxième édition, les organisateurs ne voulaient pas se contenter de reproduire la formule de la première. Pour améliorer leur prestation, ils ont décidé d'augmenter l'offre pour Paris Plage 2002. La quantité de sable a été multipliée par trois pour atteindre 3.000 tonnes, on a ajouté une deuxième plage de sable, et la superficie de sable devant l'Hôtel de Ville a été doublée. Le confort aussi a été amélioré avec une augmentation importante du nombre de chaises longues (300, deux fois le nombre de l'année dernière) et l'adjonction de nombreux hamacs.
Plusieurs points d'eau, des aires de jeux pour les enfants et des zones sportives ont été mis à disposition des visiteurs. De nombreux végétaux, palmiers et plantes exotiques ont été utilisés pour décorer les structures, les allées et les rampes d'accès. Des manifestations musicales ont été organisées avec un concert sur l'eau et un hommage à Django Reinhardt.

Era una segunda edición pero los organizadores no quisieron repetir simplemente la fórmula de la primera. Con el fin de mejorarla, decidieron incrementar los servicios suministrados por la Playa de París 2002. La cantidad de arena se triplicó a 3.000 toneladas. Además, se instaló una playa de arena adicional creando dos en vez de una y se dobló la superficie de arena en la Plaza del Ayuntamiento. Se mejoró el confort, aumentado considerablemente el mobiliario: 300 tumbonas (el doble del año anterior) y un gran número de hamacas.
Se añadieron algunos puntos de suministro de agua, zonas de juegos para niños y zonas de deportes para los visitantes. Se utilizó un gran número de plantas, palmeras y vegetación exótica para decorar las estructuras, caminos y rampas de acceso. Se organizaron eventos musicales, incluyendo una actuación flotante y un homenaje a Django Reinhardt.

Tegemist oli teise katsega, kuid korraldajad ei tahtnud lihtsalt korrata esimesel korral kasutatud võtteid. Selleks et projekti täiustada, otsustasid nad suurendada programmi Pariisi plaaæ 2002 raames pakutavate teenuste arvu. Liivakogust kolmekordistati, nii et see ulatus 3000 tonnini, lisati täiendav liivarand, nii et ühe ranna asemel oli nüüd kaks, ning raekoja platsi liivaga kaetud osa kahekordistati. Mugavuse parandamiseks lisati märkimisväärsel hulgal mööblit: 300 lamamistooli (poole rohkem kui eelmisel aastal) ja terve hulk võrkkiikesid.
Külastajate jaoks lisati mitmeid veekraane, laste mänguväljakuid ja sportimisalasid. Rajatiste, teede ja juurdepääsunõlvade kaunistamiseks kasutati haljastust, palmipuid ja haruldasi taimi. Korraldati muusikasündmusi, sealhulgas ujuvkontserte ning Django Reinhardti tribüütkontsert.

Porto

Description of the basin

The 650 km of the Rio Douro, from its source in Spain, serve as a natural frontier between Portugal and Spain and between Miranda do Douro and Barca de Alva before the river reaches the Atlantic near the city of Porto in Portugal.
The area under the jurisdiction of the Port Authority of the Douro and Leixões, or APDL, includes:

- The marginal route of the public maritime property from the crossing of the Rue de Belgique at "Praia de Lavadores" to the "Boa Nova" lighthouse to the north of the port of Leixões;
- The zone of the port of Leixões encompasses the protective walls, the surrounding wetlands and the existing docks or those to be built;
- The course of the Leça river down to the old Guifões bridge and the strip of land bordered by the respective public property;
- The zone of the port of Douro, including all the estuary of the Douro from 200 m upstream of the Dom Luis I bridge to Foz with its banks, mooring pontoons, quaysides, docks and open storage areas, either already in existence or to be created.

In accordance with its purview, the APDL drew up concessionary contracts for the operational running of the port of Leixões and for the tourist activities within its area of jurisdiction. Similarly, licences were granted to various entities (close on a hundred) the activities of which are devoted to a large extent to tourism and fishing.

GENERAL INFORMATION	
Case Title:	Overseas Town
City:	Porto
Country:	Portugal
Region:	-
Population:	-
Name of the river:	Douro
Contacted organisations:	APDL – Administração dos Portos do Douro e Leixões S.A.
Postal address:	Av. da Liberdade, Apartado 3004, 4451-851 - Leça da Palmeira Portugal
Tel, fax, e-mail:	(351) 22 999 0700. (351) 22 999 0700. correio@mail.apdl.pt
Names of contacts:	-

Description of the site of the intervention

The city of Porto has always been the leading metropolis of northern Portugal with a large population and economic activities linked to a vast hinterland resulting from its geographic position which helps extensive commercial relationships given that it benefits from the Douro estuary serving as a gateway to the Atlantic.
The development of the city, which dates from the 12th century, is largely due to its natural harbour and to its reputation as a flourishing commercial centre. The busy port was the most obvious image of the dynamic drive of Porto, despite the importance of its industrial development.
The city of Porto, as a base for the redistribution of goods and people, exported flax to Brazil and wine from the Douro region to all corners of the planet under the brand of "Port Wine" and imported products from northern Europe (hardware, fabrics, luxury goods) and from the Portuguese colonies for redistribution inland or for re-exporting.
Practically all the old photographs show the City of Port with the Rio Douro, its barges, its clippers and the hustle and bustle of people loading and unloading

SOURCES USED	
Website:	www.apdl.pt
Publication:	-
Plan:	-
Project:	-
Magazine:	-
Newsletter:	-
Other:	-

the ships. At the end of the 19th century, the river port of the Douro revealed its limitations with respect to the new requirements of shipping with the appearance of large ships unable to move up and manoeuvre in the narrow twists and turns of the Douro estuary, leading to the development of the port of Leixões.

Description of the operational cooperation implemented

The activity of the Douro river port was transferred downstream to the port of Leixões, located in the Metropolitan District of Porto near the towns of Matosinhos and Leça de Palmeira, which comprises the largest port infrastructure of northern Portugal and one of the most important in the whole country, handling almost 25% of Portuguese overseas trade.
The immediate consequence, in line with current trends, was the reconversion of the respective space made available in the Douro port areas for tourism and leisure activities. Such rehabilitation included:

- *The Gaia quaysides* in the town of Vila Nova de Gaia on the left bank of the Douro covering an area of approximately 27,000 m², with the public tender launched by the APDL in 1998 under the title of "Tourist and Hotel Concession – area adjacent to the berthing quaysides of Gaia". This has proved to be a successful project, launched by the APDL and carried out with the help of private investment through a concession granted to the Dourocais company. The objective set, and met, was the creation of an attractive centre at Gaia through the creation of facilities housing restaurants, bars, leisure and entertainment activities, together with open-air areas for shows, with lakes, gardens and esplanades bordering the river.
- *The Estiva and Ribeira quaysides* in the city of Porto itself, on the right bank of the Douro. The Estiva and Ribeira quaysides, formerly two of the most important port areas of the Douro, are today completely given over to marine and tourist activities that are being increasingly developed and intensified on the Douro.
- *The Cantareira-Sobreiras zone.* This development began with the construction of a dyke to protect the local population from flooding, before being focused on the construction of an open-air area with new landscaping to ensure a harmonious integration of gardens, roads, restaurants and esplanades.
- *The Gaia embankment* from the Dom Luis I bridge to the Gaia quaysides. The aim of this development was to reinforce the left bank of the Douro through the construction of a extension of the dyke, thus rehabilitating and enhancing the existing area essentially through the changes made to the gardens.

The APDL has invested in various market orientations to launch tenders for the award of concessionary contracts for the management of the various activities of the private sector.
The investments raised by the APDL, which are not strictly port-oriented, i.e. with external benefits for the population at large, represented at the last count 40% of the total investment.
Among the investment projects for the Douro, special mention must be made of the Border Protection of Canteiras/Sobreiras, the Fishing Harbour of Afurada and the Rehabilitation of the Gaia quaysides.

Relationship with the RiverLinks approach

Objectives

The objectives have been:
- Rehabilitation of the areas and facilities now devoid of all the port activity they had in the past;

Integration of those areas into the urban and historic setting of the city;
- Revitalisation of the representative historic and cultural components of the city of Porto and of the town of Vila Nova de Gaia;
- Creation of new leisure areas making the Rio Douro a pole of attraction in the city;
- Development of the attraction of the Rio Douro for tourists by a sustained intensification of marine and tourist activities.

Results obtained

The results are considered to be positive as proved by the enclosed photographs.

Evaluation

Strengths

The following main strengths can be highlighted from what has been achieved with the Douro:
- The natural beauty of the river banks, its history and typical boats, which amply deserve being classified as part of the world's heritage;
- The economic development which has resulted from the rehabilitation of the areas.

Weaknesses

The main weaknesses of the Douro project are:
- The conditions of the Douro estuary, that will be improved in the near future;
- The necessity of creating more moorings for the marine and tourist activities.

Prospects

Opportunities of synergy with RiverLinks
Inclusion within the on-going RiverLinks circuit

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Summaries

Le banchine di Gaia nella città di Villa Nova di Gaia sulla riva sinistra del Duero che coprono un'area di circa 27.000 metri quadri, furono realizzate grazie a un appalto pubblico bandito dall'Apdl nel 1998 con il titolo di "Concessione turistica-area adiacente le banchine d'ormeggio di Gaia". Il progetto, lanciato dall'Apdl e portato a termine con l'aiuto di capitali privati grazie a una concessione rilasciata alla compagnia Durocais, ha avuto un enorme successo. L'obiettivo, pienamente raggiunto, era la creazione a Gaia di un centro d'attrazione composto da un complesso dotato di alloggi, ristoranti, bar e impianti per il tempo libero e il divertimento, insieme a spazi aperti per mostre, con laghi, giardini e passeggiate che fiancheggiano il fiume.

Die GAIA-Kaipassagen in der Stadt Vila Nova de Gaia am linken Ufer des Duoro-Flusses bedecken eine Fläche von ca. 27.000 m². 1998 startete ADPL die öffentliche Ausschreibung unter der Bezeichnung „Touristische und Hotelnutzung für die an die Gaia-Kaipassagen angrenzenden Flächen". Das durch ADPL gestartete Projekt gestaltete sich erfolgreich und wurde mit Unterstützung privater Investoren durchgeführt, verbunden mit einer an dem Unternehmen Duorocais gewährten Konzession. Das gesetzte und erreichte Ziel war die Errichtung eines attraktiven Zentrums in diesem Gebiet, in dem Bebauung ermöglicht wurde, Restaurants und Bars eröffnet sowie Freizeit- und Vergnügungsaktivitäten angeboten wurden, verbunden mit Freiflächen für Shows sowie der Anlage von Seen, Gärten und den Fluss begrenzenden Esplanaden.

Los muelles de Gaia en la ciudad de Vila Nova de Gaia emplazados sobre la orilla izquierda del Duero abarcan una zona de aproximadamente 27.000 m², con la oferta pública lanzada por la APDL en 1998 bajo el título de "Concesión Turística y Hotelera – zona adyacente a los muelles de atraque de Gaia". Ha resultado ser un proyecto exitoso, lanzado por la APDL y llevado a cabo con la ayuda de inversión privada a través de una concesión otorgada a la empresa Dourocais. El objetivo establecido, y alcanzado, fue la creación de un atractivo centro en Gaia a través de la construcción de instalaciones cubiertas como restaurantes, bares, actividades

Les Quais de Gaia, dans la ville de Vila Nova de Gaia (berge gauche du Fleuve Douro), avec une aire d'approximativement 27.000 m², lors du lancement du concours public par l'APDL en 1998 sur le thème «Concession Touristique - Hôtelière du Terre-plein Adjacent au Quais accostable de Gaia».
Il s'agit d'un projet de succès, lancé par l'APDL et exécuté avec recours à des investissements privés par le biais d'une concession attribuée à l'entreprise Dourocais. L'objectif visé et obtenu fut la création d'un pôle attractif à Gaia, en créant des structures qui hébergent la restauration, des bars, des espaces d'animation et euve.

Gaia kaipiirkond Vila Nova dr Gaia linna Duoro vasakkaldal koos teeninduspiirkonnaga katab umbes 27,000 km², avati APDL pool 1998 pealkirja all "Turismi – ja Hotellikeskus – ala, mis külgneb Gaia kaipiirkonnaga". APDLi poolt algatatud projekt on osutunud väga edukaks ja viidud ellu läbi erasektori investeeringute, mida toetas Dourocais kompanii. Seatud eesmärkide täitmisega loodi atraktiivne Gaia keskus, kus asuvad elamud, restoranid, baarid, vaba aja keskused koos vabaõhuetenduste lavadega, järved, aiad ja esplanaadid ääristavad jõe kaldaid.

Praha

1. Introduction

The Czech Republic was affected by catastrophic floods in the summer of 1997, July 1998 and August 2002. Consequences of the floods in 1997 and 1998 were destruction of property, extensive ecological and cultural damage as well as unimaginable individual sorrow. On the basis of a detailed assessment of the catastrophic flood in 1997 and experiences of basic restoration of the affected areas, the Czech government has commissioned a strategy for protection against floods as a basis for a systematic approach in this area and material for preparation of necessary measures. Within the framework of this Strategy for protection against floods, large Czech cities in the potential flood-endangered areas prepared flood conceptions and plans. Prague, the town, which deserves to be introduced within the frame of the RiverLinks Project as a successful example of the preparation of a Flood Model for protecting the town (inhabitants, cultural treasures, individual property, etc.) against flood damage and to avoid ecological disasters (industrial accidents in connection with flood events), plays a very progressive role in handling high water in the Czech Republic. The Town Council of Prague and the Vitava River Basin Authority have already decided to improve Prague's preparation after the enormous floods in Europe in the mid 1990s.
Prague is the capital of the Czech Republic and lies on the river Vltava (Moldau) in the north-west of the country, in the Bohemian region, near the German border (distance to Dresden: approx. 40 km). Prague has about 1.200.000 inhabitants. The Vltava is a tributary on the left side of the river Elbe. The source of the Vltava is located in the south- east of the Czech Republic, on the German border, in the Bohemian Forest, near the Lusen mountain (1.371 m NN). After 432 km

GENERAL INFORMATION	
Case Title:	Flood Protection Strategy in the Czech Republic after the Floods in 2002
City:	Prague
Country:	Czech Republic
Region:	Bohemia
Population:	1.200.000 inhabitants
Name of the river:	Vltava (Moldau)
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Tel, fax, e-mail:	Tel.: (+42) 060 / 3439792 Fax: ---- e-mail: e.zeman@dhi.cz
Names of contacts:	Dr. Evzen Zeman, Dr. Pavel Tacheci

Praha

the river flows through the city of Melnik, in the north-eastern part of the Czech Republic into the river Elbe. The total area of the Vltava basin is about 28.090 km^2. In 2002 Prague experienced the highest recorded flood since 1827. The water level of the Vltava was about 0,7 to 3 m higher than during Prague's last great flood in 1890, the discharge amounted to more to 3.000 m^3/s.

2. Method

The Town Council of Prague and the Vltava River Basin Authority chose the institution DHI Hydroinform a.s. for the development of a flood model of the Vltava River in Prague.
DHI Hydroinform a.s. developed two simulation models for purposes of flood management in order to generate maps of flooded areas, with the maximum

SOURCES USED	
Website:	www.citysam.de/prag-info.htm ; www.schlaufuchs.at/list/l_fluess.htm ; www. euroescort.cz/the-best-of-prague-culture-de.htm; www.dtihk.cz/plus/archiv-dt/2003/0203/plus-0203-titelstory-dt.htm
Publication:	DHI Water & Environment: Flood Protection Strategy in the Czech Republic after the Flood in 2002; (Prague,)
Plan:	-
Project:	-
Magazine:	-
Newsletter:	-
Other:	-

water level during one of the largest documented flood events in Prague (1890), which was close to HQ100 by its peak discharge (design flood for Prague). Mathematical modelling tools were used to obtain information about potential flood areas and the depths of water in these areas. Besides, much of the important information for land-use development, flood defence improvements and also information for planning and the future management of potential flood areas were obtained by mathematical simulation.
The following three types of input were necessary for the model development:

- Digital elevation model of the area
- Flood data
- Hydraulic description of the flooded area.

Digital maps of possible and potential flooded areas (with flood lines, water depths, water levels, water velocity) were obtained by the intersection of a digital evaluation model of the interested area with the hydraulic simulation results. Also a hydrograph and other information of the most disastrous and well recorded flood event in 1890 were used.
The two simulation models are the "1D+ model" and the "2D model".

1D+ model (1994-1997)
The 1D+ model is a 1D mathematical hydraulic model of the Vltva River. It comprises three detailed models with different outputs, which you can see in table 1.

Table 1. Outputs of the 1D+ model

Model / Simulation	Output
1D+ model	
simulation tool MIKE 11 HD	Time of flood peak arrival in Prague
1D+ model – more detailed model	
1D technology,	
simulation tool MIKE 11 HD	Maps of:- flood line - water depth- water level
2D detail model	
FLUVIUS simulation	Charles Bridge and surrounding area - picture

The outputs of the model were used:
- To issue flood zones, very important for the city development planning purposes, by Prague Magistrate and Prague Quarters
- For on-line training of the Integrated Rescue Centre in Prague
- The maps: for all preventive activities including distribution maps with potential flood zones in the Prague Central area
- The flood map Water depth and water level distribution: for definition of active flooding zones where the construction activities were restricted

Praha. Flood of Vitava

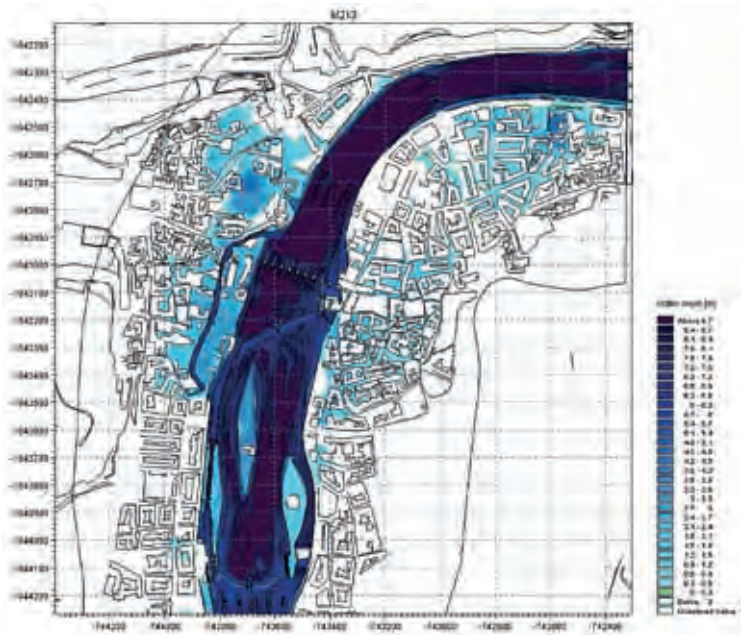
2D model (1999-2000)
The 2-dimensional mathematical model was built to update and increase information about water flow in the city under flood conditions. It uses a curvilinear network (MIKE 21C). Results are maps with flow directions and velocity in combination with the spreading of flooded areas. Examples are shown in figures 1 and 2. Consequently with 2D technology it is possible to predefine risk zones during floods, because flood depth maps can be defined with velocity fields. These results are very valuable for the preparation of flood management plans and evacuation planning maps.

3. Objectives

The main aim of this project is the preparation of a working model for flood prevention and flood protection measures as well as for the improvement of flood management in Prague. The flood-maps are to be used for the preparation of preventive acts, proposals of structural mitigation measures and operative use during floods in order to identify the weak points in flood protection and provide inputs for flood management planning, logistic and evacuation planning.
Flood maps are very important to make people aware of flood risks, colourful maps with indicators are comprehensible for all, including the staff in charge of prevention. Because the population is informed about flood wave indicators, for example water depths, discharge and water level in time and space, it is possible to influence the behaviour of the people.

4. Results obtained

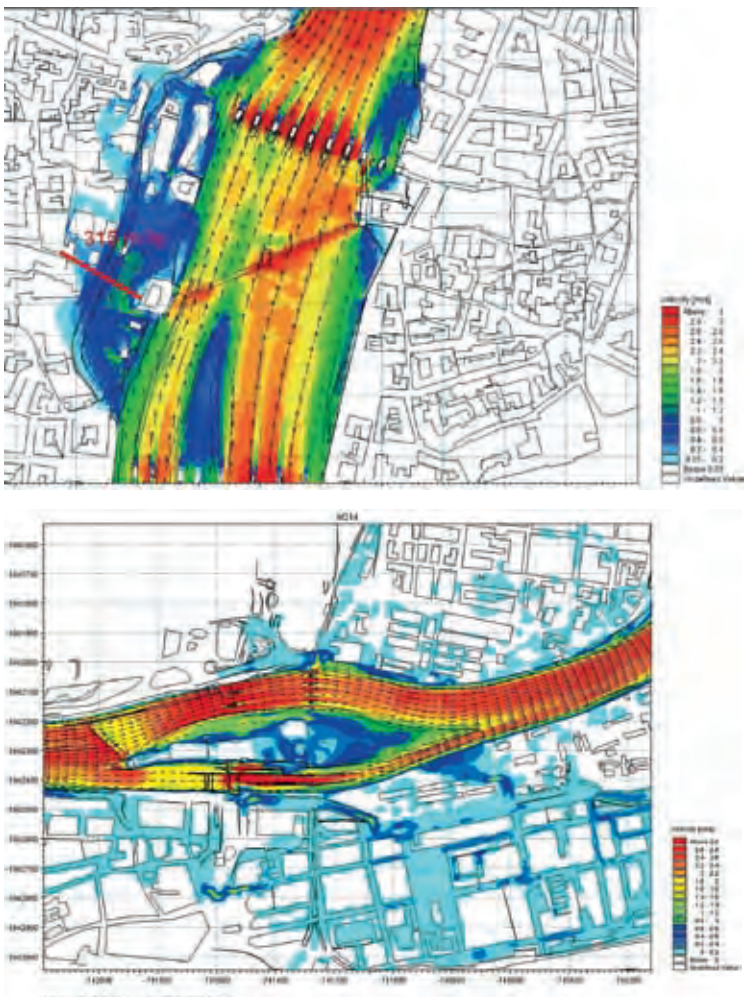
All the resulting maps were used during the 2002 Flood. Moreover, the mathematical models illustrated here were operative to support the Flood council of Prague. According to the CHMI forecast, the actual flood maps were produced and delivered to the Flood management committee. After the 2002 Flood the simulated flood line (in the model) was compared with the real one of the 2002 Flood (applied from aerial photographs of August 2002). The result was: both lines are very close. So obviously the mathematical model simulation was successful.



The results of flooding

6. Synthesis sheet

Case	High	Medium	Low	Absent
Ferry services, historic boats			*	
Cafés, restaurants		*		
Harbours and marinas		*		
Parks and promenades		*		
Cycle routes		*		
Sports and other leisure activities				*
Artificial lighting systems				*
Theatres, museums, science centres		*		
Water quality measures		*		
Water management options, especially flood prevention and flood protection	*			
Housing and offices		*		
Reduced motorised traffic, parking				*
Integrated masterplan	*			
Art and sculptures		*		
Temporary markets and festivals				*
Facilities for children, the elderly and disabled				*



Models of flood results

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Summaries

Sulla base di una dettagliata valutazione della catastrofica inondazione avvenuta nel 1997, la Repubblica ceca ha commissionato uno studio strategico per la protezione contro le inondazioni.
Vennero sviluppati due modelli di simulazione per il controllo delle inondazioni, e ottenute, grazie a simulazioni matematiche, importanti informazioni riguardanti il miglioramento dei sistemi di difesa contro le inondazioni, la gestione delle aree soggette a questo tipo di rischio e lo sviluppo e la pianificazione del territorio.
Sono state inoltre realizzate mappe digitali delle potenziali aree inondate (con linee di inondazione, profondità, livelli e velocità dell'acqua) grazie all'intersezione di un modello digitale di valutazione dell'area interessata con i risultati di una simulazione idraulica.
Tali risultati rivestono un notevole valore ai fini dell'approntamento di un piano di gestione delle inondazioni e delle relative mappe di evacuazione.
E' stato costruito un modello matematico a due dimensioni per aggiornare e accrescere le informazioni riguardanti il fluire delle acque nella città allagata.
Le mappe risultanti sono state utilizzate durante la piena del 2002 e i modelli matematici furono usati dal Flood Council di Praga. La linea di allagamento simulata nel modello è risultata molto a quella reale.

Auf der Grundlage einer detaillierten Auswertung des katastrophalen Hochwasserereignisses von 1997 beschloss die tschechische Regierung eine Hochwasserschutz-Strategie. Für die Hauptstadt Prag wurden zwei Simulationsmodelle für Zwecke der Hochwasserabwehr entwickelt, womit eine Vielzahl von Informationen für die Flächennutzungsentwicklung, die Verbesserung der Hochwasserabwehr als auch die Beplanung und künftige Nutzung potentieller Überschwemmungsgebiete gewonnen wurde.
Digitale Karten der potentiellen Überschwemmungsgebiete wurden mittels eines Bewertungsmodells unter Verwendung der Ergebnisse der hydraulischen Simulation erstellt. Die damit gewonnenen Ergebnisse sind außerordentlich wertvoll für die Hochwasserabwehr- und Evakuierungsplanung.
Ein zweidimensionales mathematisches Modell wurde aufgebaut, um den Kenntnisstand hinsichtlich des Durchflussverhaltens des Wassers durch die Stadt unter Flutbedingungen zu aktualisieren und zu erhöhen.
Sämtliche Kartenwerke wurden während des Hochwasserereignisses im Jahr 2002 verwendet; ebenso wurden die mathematischen Modelle durch die Hochwasser-Einsatzleitung in Prag genutzt. Die simulierten Überschwemmungsgebiete zeigten eine enge Übereinstimmung mit den tatsächlich eingetretenen.

En base a una valoración detallada de la inundación catastrófica de 1997, el gobierno checo encargó una estrategia para la protección contra las inundaciones. Se desarrollaron dos modelos de simulación para el control de las inundaciones y se obtuvo gran parte de la información para el desarrolllo de la urbanización del terreno para las mejoras de defensa contra inundaciones e información para la planificación y la gestión futura de zonas potenciales de inundación mediante simulación matemática. Se obtuvieron mapas digitales de posibles y potenciales zonas inundadas (con líneas de inundaciones, profundidad, niveles y velocidad del agua) mediante la combinación de un modelo de evaluación digital de la zona interesada y los resultados de la simulación hidráulica. Dichos resultados son muy valiosos para la preparación de los planes de gestión de las inundaciones y para la creación de los mapas de planificación des evacuaciones. Se elaboró un modelo matemático de dos dimensiones para actualizar e incrementar la información sobre el caudal del agua en la ciudad en condiciones de inundación
Todos los mapas resultantes fueron utilizados durante la Inundación del 2002 y la comisión de Inundaciones de Praga hizo uso de los modelos matemáticos. La línea de inundación simulada del modelo era muy parecida a una real.

A la suite d'une évaluation détaillée des inondations catastrophiques en 1997, le gouvernement tchèque a commandé une stratégie pour la protection contre les inondations. Deux modèles de simulation ont été mis eu point pour la gestion des inondations et une grande partie des données importantes pour le plan d'occupation des sols, pour les améliorations des protections et également des informations sur la planification et la gestion future des zones inondables a été obtenue par la simulation mathématique. Des cartes numériques des zones inondables (avec les axes, les niveaux d'eau, la profondeur et la vitesse de l'eau) ont été obtenues par l'intersection d'un modèle d'évaluation numérique de la zone concernée avec les résultats d'une simulation hydraulique. Ces résultats sont précieux pour la préparation des plans de gestion des inondations et des cartes d'évacuation. Un modèle mathématique 2D a été construit pour mettre à jour et augmenter les informations sur l'écoulement des eaux dans la ville en cas d'inondation. Toutes les cartes ainsi dressées ont été utilisées lors des inondations de 2002 et les modèles mathématiques ont été utilisés par la Cellule des Inondations de Prague. L'axe simulé des inondations du modèle s'est avéré être très proche de la réalité.

1997 suvel, 1998 juulis ja 2002 augustis tabasid T©ehhi Vabariiki suured üleujutused. Pärast 1997. a. üleujutust asus T©ehhi valitsus ellu viima üleujutuskaitse strateegiat, mis pidi saama piirkonnas süstemaatilise töö ja vajalike meetmete ettevalmistamise aluseks. Selles kontekstis töötati Praha linna tellimusel välja üleujutusmudel, mis demonstreeriks linna (elanike, kultuuriväärtuste, eraomandi jne.) kaitsmise võimalusi üleujutuste korral ning aitaks vältida ökoloogilisi katastroofe (üleujutustega seonduvad tööstusõnnetused). Selle mudeli raames töötati välja kaks üleujutuste ohje simulatsiooni, mis võimaldaks koostada üleujutusalade kaarte, võttes aluseks ühe Praha ajaloo kõrgeima veetaseme (aastal 1890), mille kõrgeim väljavoolu tase oli peaaegu HQ100 (Praha üleujutusmudel). Potentsiaalsete üleujutuspiirkondade kohta info saamiseks ja nende piirkondade võimaliku veetaseme leidmiseks kasutati matemaatilist modelleerimist. Lisaks saadi matemaatiliste simulatsioonidega rohkelt olulist infot maakasutuse arengust, üleujutuskaitse parandustest ning samuti potentsiaalsete üleujutusalade planeerimise ja tulevase haldamise alast teavet. T©ehhi Vabariigis mängib see mudel väga progressiivset rolli suurvee ohjes ning selles kontekstis ka linnaarenduse suunamises.

Regensburg

1. Introduction

The Danube is the longest river in Europe. The 2,845 km long river links the Black Forest with the Black Sea. The source is in the German region Baden-Württemberg, in the Black Forest, near Donaueschingen (confluence of the streams Brege and Brigach).
The estuary into the Black Sea is characterized by a big river delta (5.640 km^2), located in the north-east of Romania and the south-west of the Ukraine (near the Romanian city Sulina). Due to the deposit of sediments the Danube delta grows 50-70 m into the Black Sea every year. The total basin area of the Danube comprises an area of approx. 817.000 km^2. 203 Mrd. m^3 water runs to the Black Sea annually.
The administration of the Danube basin area is divided between the following 10 countries: Germany, Austria, Slovakia, Hungary, Croatia, Serbia, Romania, Moldavia, Bulgaria and the Ukraine. The main tributaries are the rivers: Iller, Lech, Isar, Inn, Traun, Enns, Ybbs, Leitha, Raab, Rabnitz, Sio, Drau, Save, Velika Morava, Timok, Osker and Jantra, on the right bank and Altmühl, Naab, Regen, Kamp, March, Vah, Nitra, Hron, Ipoly and Theiß on the left-bank. Traditionally the Danube is divided into 3 sections, see Table 1.

Economically the Danube and its basin is characterized by different land uses. Industry is dominant in and around the big cities, the middle and lower Danube sections are mostly agricultural. The Danube is one of the more important European waterways. The most important ports are indicated in Table 2.

Table 1. Sections of the Danube

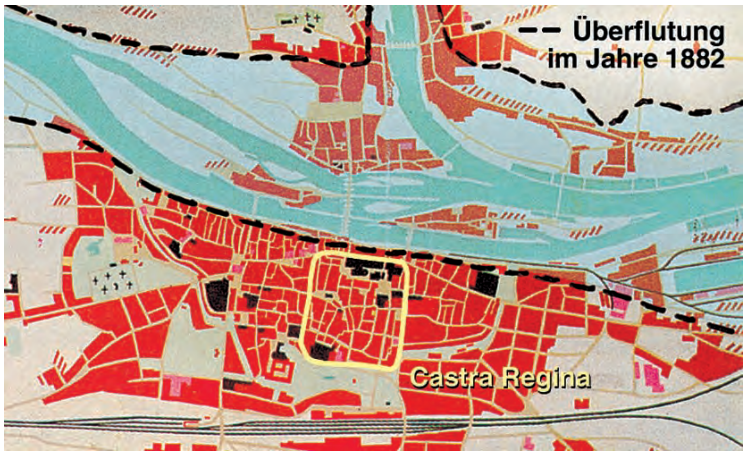
Section of the Danube	Stretch	Basin area	Countries	
Higher Danube	Donaueschingen to Vienna	Approx. 131.000 km	Germany, Austria	(965 km)
Middle Danube	Vienna to Turnu Severin	Approx. 437.000 km^2	Slovakia, Hungary, Croatia, Serbia, Romania	(950 km)
Lower Danube	Turnu Severin to Sulina	Approx. 252.000 km^2	Bulgaria, Romania, Moldavia, Ukraine	(930 km)

GENERAL INFORMATION	
Case Title:	The Preparation and implementation of the so-called Blue Plan of Regensburg
City:	Regensburg
Country:	Germany
Region:	Bavaria
Population:	148.869 inhabitants (2003)
Name of the river:	Danube, Regen
Contacted organisations:	Stadt Regensburg, Tiefbauamt
Postal address:	Dr.-Martin-Luther-Str.1 – 93047 Regensburg Germany
Tel, fax, e-mail:	Tel.:(+49) 0941 / 507-1811 – Fax:(+49) 0941 / 507-4659 – e-mail: kastenmeier.franz@kis-regensburg.de
Names of contacts:	Herr Kastenmeier

SOURCES USED	
Website:	http://www.umweltbundesamt.de/rup/hochwasserschutz.html www.via-donau.org/deutsch/pages/iwt_01.html: Prof.Dr.Franz Pisecky: "Die Donau – Daten eines Stromes"
Publication:	Umweltbundesamt (UBA): UBA F+E 201 16 116 "Sichern und Wiederherstellen von Rückhalteflächen –Fallstudie Regensburg"
Plan:	-
Project:	-
Magazine:	-
Newsletter:	-
Other:	-

Table 2. Important ports on the Danube

Country	City / Ports
Germany	Kelheim, Regensburg, Deggendorf, Passau
Austria	Linz, Enns, Krems, Vienna
Slovakia	Bratislava, Komarno
Hungary	Komarom, Györ, Szöny, Budapest, Dunaujvaros, Mohacs
Croatia	Vukavor
Serbia	Novi Sad, Belgrad, Pancevo, Smederevo, Prahovo
Romania	Orsova, Turnu Severin, Calafat, Turnu Magurele, Giurgiu, Calasari, Harsova, Braila, Galatz, Tulcea
Bulgaria	Vidin, Lom, Somovit, Svistov, Russe, Tutrakan, Silistra
Ukraine	Reni, Ismail, Kilia, Ust´-Dunajsk



Regensburg lies on the Danube river and deserves to be included in the RiverLinks Project. It is a densely built city with a beautiful mediaeval centre in the south-east of Germany in the Bavarian region, with a population of barely 150,000 people. The city lies in a transition zone of the highlands, Swabian Alps / Bavarian Forest, and the flat country area in front of the Alps. In Regensburg the rivers Naab and Regen flow into the Danube. Until the middle of the 20th century the town had several flood basins, but river extension measures and the building of sewers destroyed these and the river cross-section was narrowed. The consequence was high flood risk in Regensburg along the whole course of the Danube and the Regen. The combination of all these aspects leads to a considerable conflict between city and river (flood risk and flood damage potential). The Flood Protection Planning in Regensburg tries to deal with this problem.

2. Method

The analyses for the Bavarian Action Program 2020 showed that the activation of retention areas with 30 Mio. m^3 in the basin area of the Danube river would have very little effect on the flood risk situation in Regensburg (at best a 10-20 cm lower water level). So the flood control methods in Regensburg are based on technical and structural protection measures and better flood prevention.
Flood protection planning in Regensburg by public and municipal authorities has a long tradition. In the beginning of the 1980s the town administration planned flood control measures for protecting the Danube island and the Stadtamhof district against a water level of a 100-year-event (HQ 100). Flood walls were planned in the centre leading to vociferous protests on the part of the inhabitants, because the flood walls would obstruct the view to the river and the historic townscape would be permanently compromised. The citizens argued that they would rather be "drowned" once in 100 years than live behind the walls for 100 years. The first attempts to construct structural flood protection made the people aware of the themes of flood risks and flood control. During the following years, mostly after flood events, the town administration and the water authority started many new attempts to develop and implement flood control concepts in order to guarantee flood protection for a 100-year-event, which was the intention of the Bavarian Free State, - but the conflicts between politicians, the administration and citizens grew stronger. The inhabitants increasingly wanted flood protection against an approximately 20-year flood event, possibly using mobile elements.
In 1997 a new flood control project with new strategies was developed. The main strategy is the involvement of citizens in the planning process and implementation of flood prevention included in an "Urban Development Technical Challenge" as well as "Open Planning". Since 1999 the government of the Oberpfalz region is the project coordinator, and the project implementation is the duty of the Town Administration in cooperation with the Water Economic Authority in Regensburg. The basis of the concept is called the "Blue Plan". The surface water or ground water flooded areas were determined by modelling and blending the topographical facts with water level data during a 100-year flood event (design floods: Danube 1988 and Regen 2002). Discussion forums, known as "Runde Tische Hochwasser" ("Flood Round Tables"), were also organized in various districts. These gave the citizens the opportunity to express their wishes and demands as well as to make proposals for possible protection measures, which are published in their entirety by the town administration and the Bavarian Free State in the form of Information Sheets. The participants included citizen groups, the project coordinator, representatives of associations and unions as well as affected neighbours. The organization opened an office in Munich.

3. Objectives

The starting point of the discussion forums ("Runde Tische Hochwasser") was the precondition of the State Water Economic Administration, that the flood control works have to ensure protection against a 100-year flood possibility. The participants discussed the "right" flood protection and it became clear that they

had different opinions, interests, demands and objectives. One important agreement was the protection of the town against frequent floods. There was also a large degree of consent about the following objectives:

- Creation of retention areas in and in front of Regensburg, in order to avoid or reduce flood risks and flood damage
- Implementation of flood protection against frequent floods (HQ 10 - HQ 20)
- In the event of a flood > HQ 20, only the use of mobile elements
- Maintenance of the singular townscape and river landscape, à no structural measures, which would impair or change this situation negatively
- Preservation of the "view-relation" between the old town and the Danubian islands
- Use of mobile elements and measures for protection of objects according to special situations and urban development
- Improvement of flood forecasts
- Protection against ground water
- Establishment of a fund or foundation to pay for flood damage instead of structural flood protection

A two-phased, technical-urban-developmental, landscape plan was devised based on the calculated flood-endangered areas, the proposals of the citizens and the planning objectives of the Town Administration of Regensburg as well as the difficult situation of urban development (the position of mediaeval buildings on the banks of the Danube). Special-field offices (with the cooperation of civic engineers, architects and landscape planners) were asked to participate in this project. The challenge consisted in the development of a technical viable flood protection plan to fulfil all the requests of the Free State (HQ 100) and the citizens (urban tolerated protection measures). The conclusion of the challenge is planned for the summer of 2004 and implementation should begin in 2007.

4. Results obtained

The most important result is the agreement between politicians, the administration and citizens. Without this, implementation of flood protection and flood prevention measures in Regensburg would never have been possible.
It is hard to define other results yet, because implementation is still in progress. Clearer results will be evident in autumn 2004, when the challenge is concluded.

5. Comments

Regensburg was chosen for the RiverLinks Project because of the high conflict potential between human beings and the Danube, Naab and Regen rivers.
Although work is still in progress there are a lot of innovative approaches, as for example the establishment of a fund or foundation to pay for flood damage instead of structural flood protection.
Meanwhile, the strength of the project is its high acceptance by the population, which was very difficult. This solution with discussion forums involving participants from all the affected areas can be recommended to anyone who has such a problem to solve.
The results of the Regensburg method remain to be seen.

6. Synthesis sheet

Case	High	Medium	Low	Absent
Ferry services, historic boats				*
Cafés, restaurants			*	
Harbours and marinas		*		
Parks and promenades		*		
Cycle routes				*
Sports and other leisure activities				*
Artificial lighting systems				*
Theatres, museums, science centres		*		
Water quality measures		*		
Water management options, especially flood prevention and flood protection	*			
Housing and offices	*			
Reduced motorised traffic, parking				
Integrated masterplan	*			
Art and sculptures	*			
Temporary markets and festivals			*	
Facilities for children, the elderly and disabled				*

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Summaries

A Regensburg la pianificazione in difesa delle alluvioni da parte delle autorità municipali ha una lunga tradizione. Nel 1997 è stato elaborato un nuovo progetto per il controllo e la prevenzione delle alluvioni, attraverso l'adozione di nuove tecniche adeguate. La strategia si basa sul coinvolgimento dei cittadini nei processi decisionali e nel miglioramento dei sistemi di prevenzione delle alluvioni che includono due direttive importanti: "La sfida per lo Sviluppo Urbano" e il "Piano degli Spazi Aperti", che può essere sintetizzato nel "Piano Blu". La superficie dell'acqua e l'area interessata alle alluvioni è stata determinata attraverso modelli che tengono conto dell'orografia e del livello dell'acqua.
Il più importante risultato è il rapporto tra politici, amministratori e cittadini, senza questo non sarebbe possibile la migliore protezione e prevenzione delle alluvioni.

In Regensburg hat die Hochwasserschutzplanung durch staatliche und kommunale Behörden eine lange Tradition. 1997 wurde ein Hochwasserschutzprogramm mit neuen Strategien – „Hochwasserschutz der Zukunft" – entwickelt, dass auf technischen und baulichen Maßnahmen sowie einer Offenen Planung basiert. Die Hauptstrategien sind die Einbeziehung der Bürger in den Planungsprozess sowie die Durchführung eines mehrstufigen städtebaulich-technischen Wettbewerbes. Die Grundlage dieses Programms ist der sogenannte „Blaue Plan". Die durch Oberflächenwasser oder Grundwasser überschwemmten Gebiete wurden durch Modellierung und Verschnitt der topographischen Daten mit den Wasserständen ermittelt. Über einen zweistufigen Wettbewerb wurde unter Berücksichtigung technischer und städtebaulicher Belange ein Gesamthochwasserschutzkonzept erarbeitet, basierend auf der Verbreitung der hochwassergefährdeten Gebiete, auf Grundlage der von Bürgern gemachten Vorschläge und den Planungszielen der Stadtverwaltung Regensburg unter Berücksichtigung der schwierigen Situation der Stadtentwicklung (die Lage mittelalterliche Gebäude an den Ufern der Donau). Wichtigstes Ergebnis ist die grundsätzliche Übereinstimmung zwischen Politikern, der Verwaltung und den Bürgern, ohne die eine Verwirklichung von Hochwasserschutzmaßnahmen nicht möglich gewesen wäre.

A Regensburg, la planification par les pouvoirs publics et la municipalité de la protection contre les inondations bénéficie d'une longue tradition. En 1997, un nouveau projet de contrôle des inondations avec de nouvelles stratégies a été mis au point sur la base de mesures de protections techniques et structurales et une meilleure prévention. La stratégie principale est l'implication des habitants dans le processus de planification et dans la mise en œuvre des mesures préventives compris dans un «Défi Technique de Développement Urbain» et une «Planification Ouverte». Le concept est basé sur ce qu'on appelle "le Plan Bleu". Les zones inondées par les eaux souterraines et de surface ont été déterminées par la modélisation et l'incorporation des données topographiques avec les données des niveaux d'eau. Un plan paysager à deux étapes pour l'aménagement technique et urbain a été conçu sur la base des zones calculées comme étant à risque d'inondations, des propositions des habitants et des objectifs de planification de la Municipalité de Regensburg, sans oublier la situation difficile de l'aménagement urbain (notamment la position de bâtiments du Moyen Age sur les rives du Danube). Le consensus entre les hommes politiques, la municipalité et les habitants constitue le résultat le plus important, sans quoi la mise en œuvre des mesures de protection et de prévention des inondations à Regensburg n'aurait jamais été possible.

La planificación de la protección contra las inundaciones en Regensburg por parte de las autoridades públicas y municipales cuenta con una gran tradición. En 1997, se desarrolló un nuevo proyecto de control de inundaciones con nuevas estrategias, basado en medidas de protección técnicas y estructurales y en una mejor prevención contra las inundaciones. La principal estrategia es la implicación de los ciudadanos en el proceso de planificación e implementación de la prevención contra inundaciones incluida en el "Reto Técnico de Desarrollo Urbano" así como en la "Planificación Abierta". Las bases del concepto se conocen como el "Plan Azul". Las áreas inundadas con aguas subterráneas o con aguas de superficie se determinaban modelando y combinando los hechos topográficos con los datos del nivel del agua. Se concibió un plan paisajístico de desarrollo técnico-urbano de dos fases basado en las zonas con peligro de inundaciones conocidas, en las propuestas de los ciudadanos y en los objetivos de planificación del Ayuntamiento de Regensburg, así como en la difícil situación del desarrollo urbano (la posición de los monumentos medievales en las orillas del Danubio). El resultado más importante ha sido el acuerdo entre los políticos, la administración y los ciudadanos. Sin dicho acuerdo, nunca habría sido posible la implementación de las medidas de protección contra las inundaciones en Regensburg.

Regensburgis on riigi- ja linnavõimude poolsel üleujutuskaitse planeerimisel pikad traditsioonid. Ümbritseva maastiku ja jõesängi kujunemise tõttu ei omaks veetõkkealade kasutamine Doonau jõgikonnas Regensburgi üleujutusohule kuigi suurt mõju. Baieri 2020. a. tegevusprogrammi raames koostatud analüüsid näitasid, et 30 mln m³ veetõkkealade kasutuselevõtt jõgikonnas (Regensburgist ülesjõge) suudaks linnas veetaset vähendada parimal juhul vaid 10-20 cm võrra. Seega põhinevad üleujutuste ohje meetodid Regensburgis tehnilistel ja struktuursetel kaitsemeetmetel ning tõhusamal ennetustegevusel. Selles kontekstis töötati 1997. aastal välja uus üleujutuste ohje projekt koos uute strateegiatega. Selle strateegia põhiosaks on elanike kaasamine planeerimisprotsessi ja üleujutuste ennetusmeetmete rakendamisse. Nii korraldas linnavalitsus näiteks linnaplaneerimise alase tehnilise konkursi, rakendas avatud planeerimise põhimõtteid ning avas diskussioonifoorumeid nimega "Runde Tische Hochwasser" ("üleujutuste ümarlauad").

Roma

1. Introduction

The "Project for the Tiber in Rome" is included in the new Land Use Plan for the city which substitutes the 1962 "Piccinato Plan" after forty years.
The Plan was adopted in March 2003 and was innovative in various aspects, introducing new means of urban intervention: amongst these was the strategic plan for the Tiber river. The territory covered by the project lies between the municipal boundaries to the north and the river estuary to the south, and has been divided into three distinct operative sectors: to the north, from the municipal boundaries between via Flaminia, the Salaria and Milvio Bridge, in the centre from Milvio Bridge to Magliana and finally the southern sector from Magliana to the river estuary.
The northern sector, which has always had the role of protecting the city from flooding, shows different characteristics in the stretch above the Caste Giubileo dam and the lower part nearer the built-up area. The first stretch is more naturalistic and the river crosses areas at constant flood risk where it is necessary to limit man's interventions in favour of protective action for the river's ecosystem. In the second stretch the river banks are more built-up with industrial sites, urban services and facilities immersed in the attractive landscape, underlining the need to finish the development of public amenities (such as the Tor di Quinto Park) taking into consideration the built up area facing onto it and the large number of potential users.
In the central sector, the increase in the quota for development in respect of the water level, the drastic changes to the shape of the banks and the massive transformation of the buildings facing onto the Tiber, has progressively "sterilised" the meandering river, limiting its role and importance within the built-up area. The progressive loss of its original characteristics make it necessary to bring the river back into the dynamics of the city in an attempt to reduce the distance created between river and city and to transform it from boundary to resource.
The southern sector includes an area with a series of facilities and amenities of primary importance to the city and nation, next to places with remarkable environmental and landscape value, already partially protected. This is the most problematic area, where a balance between development requirements and protection is particularly important in the archaeological sites near the river estuary.

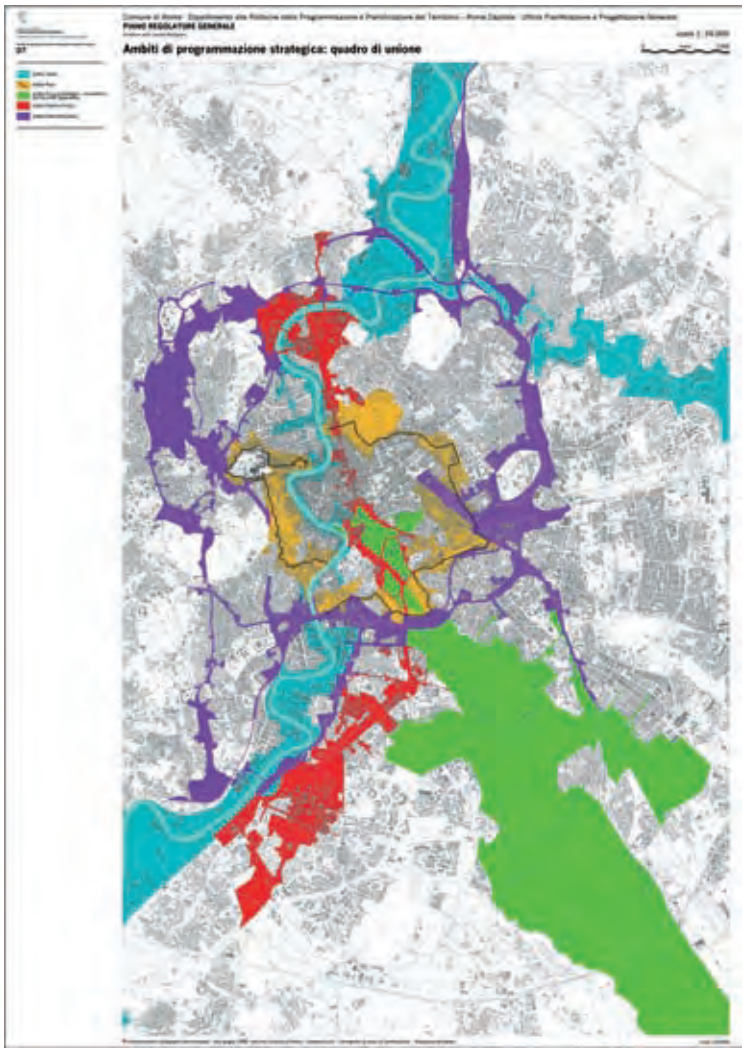
The river landscape in the Roman countryside (source: F. Oliva, *Il Sistema ambientale*, «Urbanistica", 116, 2001, p. 163)

2. Method

The reclamation and development of the Tiber and its relationship with the city must be seen from the environmental and ecological point of view in the new

GENERAL INFORMATION	
Case Title:	General Land Use Plan for Rome. Strategic programme for the Tiber River
City:	Rome
Country:	Italy
Region:	Lazio
Population:	2.534.029 inhabitants by 31/8/2003
Name of the river:	Tiber
Contacted organisations:	Budapest City Government
Postal address:	-
Tel, fax, e-mail:	-
Names of contacts:	Carlo Gasparrini (internal coordinator of the Rome Land Use Plan for projects in the historic city)

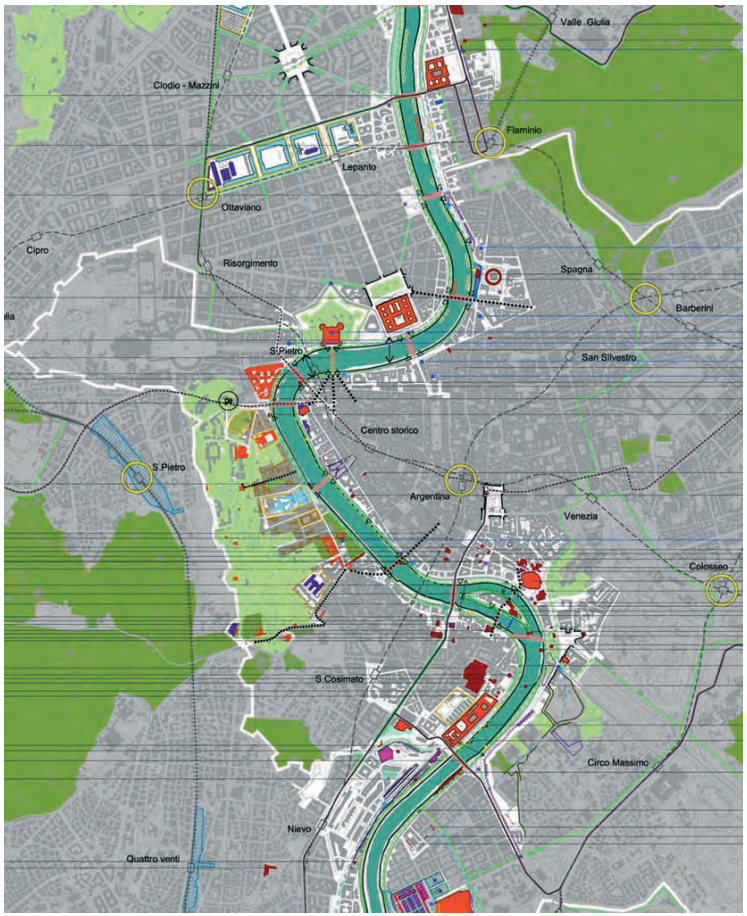
SOURCES USED	
Website:	http://www.urbanistica.comune.roma.it/dipartimentoVI/pianificazione/pianoregolatore/index.html http://www.urbanistica.comune.roma.it/dipartimentoVI/pianificazione/pianoregolatore/prg/prg_i_04.html
Publication:	STA- Plans for Rome (edited by), Il nuovo Piano Regolatore. Relazione e allegati, Roma 2003.
Plan:	-
Project:	-
Magazine:	Gasparrini Carlo, La costruzione del piano. Strategie, regole e progetti per la città storica, "Urbanistica", 116, 2001, pp. 93-107. Ricci Laura (edited by), Il nuovo piano di Roma, "Urbanistica", 116, 2001.
Newsletter:	-
Other:	Federico Oliva, Progetti per il Tevere a Roma, speech given at the Conference "Enhancement of the water resources and open spaces for new urban quality in Milan. Projects and construction at Casalecchio di Reno, Florence, Grosseto, Padua, Rome and Santiago de Compostela", Milan Polytechnic, Milan 28 May 2003.



The areas of strategic programming in the new Rome Land Use Plan (source: STA – Piani per Roma, *Il nuovo Piano Regolatore. Relazione e allegati*, Roma, 2003)

Land Use Plan as well as from its involvement and influence on town planning.
The river has already been partially cleaned but the four existing purification plants are not equipped to deal with more than 40% of the Tiber's polluted waters. It is obvious that filtering and the biological restoration of the river should be started as soon as possible and sustained to encourages incentives to invest new resources in the river.
The plan distinguishes two different policy levels for interpreting the Tiber environment: the first is regional and considers the river within municipal territory in its entirety, the other is local, concentrating on the old city and its relationship with the river.
The first level of interpretation is very structured, using the continuity and unity of the shape of the river. Three distinct environments are evident on this level: to the north natural features and their protection are essential to safeguard the city from eventual flooding; in the centre the river's relationship with the built-up area and, finally, the south where stretches of land of exceptional naturalistic and historic value are in proximity to developed areas.
The main questions which the new plan tries to deal with can be seen in the second level of interpretation: environmental quality, restoration of historical and architectural resources, new urban focalisation and mobility.

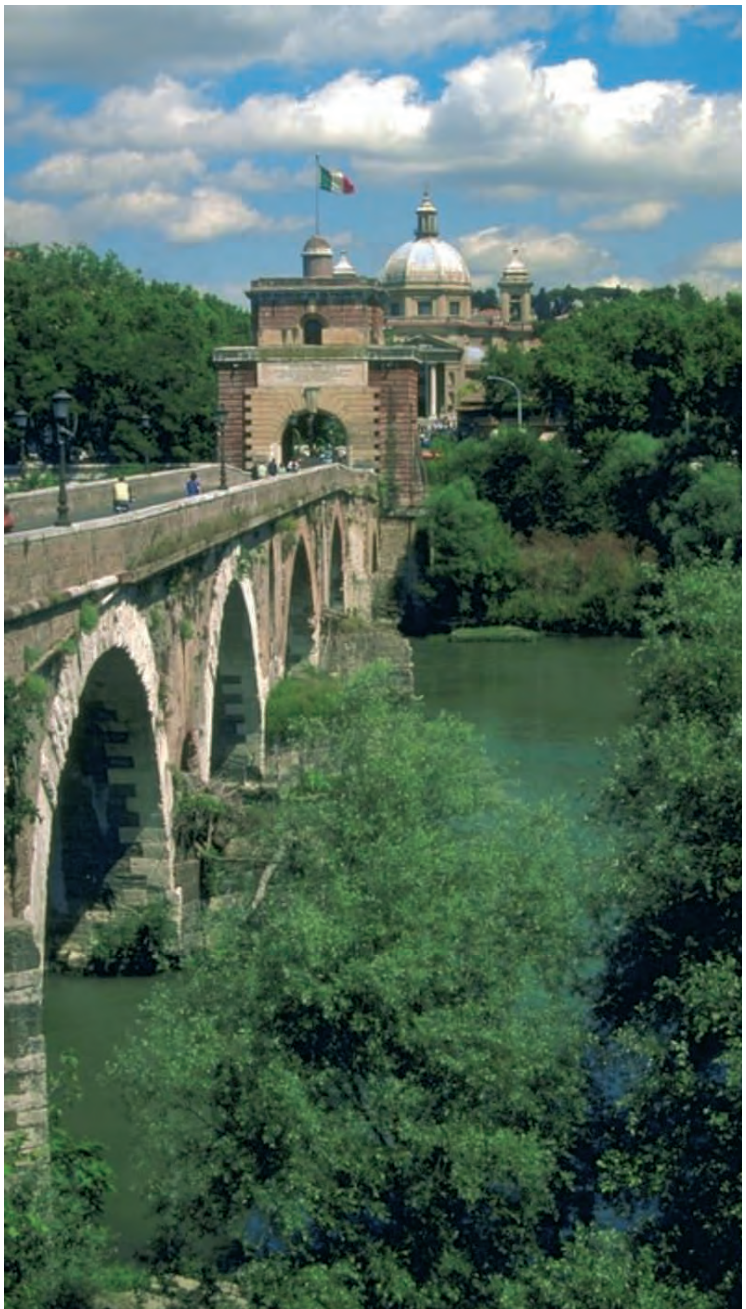
The Tiber is a strong symbol within the urban structure (source: Rome Municipality)



The system of the resources along the stretch of the Tiber in the historic centre (source: STA – Piani per Roma, *Il nuovo Piano Regolatore. Relazione e allegati*, Roma, 2003)

3. Objectives

The main objective of the Tiber programme is to bring the city near the river again. The distance created in the twentieth century, the disuse and neglect of the river system, paradoxically allowed for the conservation of much of the material which can now be reused in new quality projects. Landing jetties, piers, industrial plants, abandoned or underused areas, hydraulic installations, open spaces, archaeological remains, all almost completely forgotten by the city, now become important resources and a great heritage for the restoration of the city and its river.



The relationship between the natural element and the architecture of the historic city (source: Rome Municipality)

The Tiberina island in the Tiber (source: Rome Municipality)

The Land Use Plan identifies five main points in the strategic programme for the Tiber:

- The navigability of the river from the north (Ponte Milvio) to the river estuary, for tourist mobility rather than alternative mobility (which wouldn't be feasible today) and particularly to provide a link between the resources along the river;
- Moorage near the new focal points to improve access to the water;
- The modernisation of traffic movement along the banks of the Tiber which have become the main arteries in the old city;
- Points of access to the river, use of the embankments with new mechanised descents for walkers and the reuse of piers for leisure, culture and sport also using floating structures;
- A landscape perception of the river from the city and of the city from the river using a project to link the two different levels.

It is important to stress that the Tiber project does not set out to be either unitary or solely public. It is no longer possible to carry out uniquely public projects to solve the problems of the river, especially in a city like Rome. The plan deals with both public and private projects, whose strategy is dictated by the operative Public Administration with construction entrusted to private enterprises.
The plan aims to create the conditions to evolve complex, integrated programmes of reclamation and development of the most important vestiges and signs "which evoke historic periods and places both recent and from the distant past, to encourage rediscovery and evolution, sometimes a reinvention of visual, functional and ecological links" [1].

4. Results obtained

The Tiber reclamation programme, begun in the new Roman Land Use Plan, is a long process, consisting of many diffused, strategic interventions which the Municipal Administration must gradually add to the urban redesign and transform the 'distance' which has evolved between river and city into a new resource for the dynamics of the city.
The first positive result is undoubtedly the new navigability of a stretch of the river since April 2003 after a series of improvements to the riverbanks and the cleaning of the embankments. This fits one of the objectives indicated as a priority in the Plan: to reestablish the relationship between river and city, between river and citizens gradually to be joined by all the other planned developments to "restore" the Tiber to the city.

5. Comments

While waiting for concrete, visibile results, it is possibile to confirm that the Land Use Plan has brought attention to some of the city's most symbolic sites and the important vestiges which nature and history have left on the land.
The plan has tried to construct a "background vision" of the city by identifying the existing resources and a series of real objectives, selecting "from its possible narrative paths", the ones in which the Municipal Administration, the community and local operators should invest in order to recover a structural role for the Tiber and the reclamation of the more significant places and 'objects' which distinguish the river course.
The novelty of the Plan is its integrated strategy for recovery and development of the Tiber environment; a strategy which tries to wed town planning and architectural aspects with more environmental and ecological ones in the conviction that the plan's preestablished goals can only be achieved by programming and designing the different interventions organically in order to avoid a sectorial approach.

[1] C. Gasparrini, *La costruzione del piano. Strategie, regole e progetti per la città storica*, in «Urbanistica», 116 (2001), p. 102.

6. Synthesis sheet

Case	High	Medium	Low	Absent
Ferry services, historic boats		*		
Cafés, restaurants			*	
Harbours and marinas	*			
Parks and promenades	*			
Cycle routes	*			
Sports activities			*	
Artificial lighting systems			*	
Theatres, museums, science centres			*	
Water quality measures		*		
Water management options		*		
Housing and offices			*	
Reduced motorised traffic, parking			*	
Integrated masterplan		*		
Art and sculptures		*		
Temporary markets and festivals			*	
Facilities for children, the elderly and disabled			*	

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Summaries

L'obiettivo principale del programma per il Tevere è di ricostituire il contatto tra la città ed il fiume. La distanza creatasi nel corso del XX secolo tra queste due entità, il disuso e l'abbandono che hanno caratterizzato l'ambito fluviale per lungo tempo, hanno paradossalmente preservato dalla distruzione un'ingente quantità di materiali urbani, riconvertibili oggi in elementi generatori di nuova qualità. Approdi, banchine, impianti industriali, aree dimesse e sotto utilizzate, impianti idraulici, aree verdi, resti archeologici sono gli oggetti che oggi costituiscono un importante insieme di risorse e un grande patrimonio, per la riqualificazione di Roma e del suo fiume.
Per conseguire questo obiettivo generale il piano regolatore individua all'interno dell'ambito di programmazione strategica del Tevere alcune questioni rilevanti:
la navigabilità del fiume da nord (Ponte Milvio) fino alla foce, non per una mobilità alternativa (che oggi sarebbe improponibile) ma per una mobilità turistica e soprattutto per legare tra loro le risorse presenti lungo il fiume; gli attracchi in corrispondenza delle nuove centralità per le quali il segno d'acqua costituisce un ulteriore arricchimento delle possibilità di accesso.

Das Hauptziel des Tiber-Sanierungsprogramms (Tiber reclamation programme) ist es, "die Stadt an den Fluß zurück zu bringen". Die im 20. Jahrhundert geschaffene Distanz, der Missbrauch und die Vernachlässigung des Gewässersystems ermöglichten paradoxerweise die Erhaltung eines Großteils des "Materials", das nunmehr als Gegenstand neuer qualitätsbewusster Projekte "wiederverwendet werden kann". Landungsbrücken, Piere, Industrieanlagen, aufgegebene oder untergenutzte Flächen, wasserwirtschaftliche Anlagen, Freiräume, archäologische Überbleibsel – alles fast vergessen von der Stadt – werden nunmehr als wichtige Ressourcen und Bestandteil eines städtebaulichen Erbes für die Aufwertung der Schnittstellen zwischen Stadt und Fluss begriffen. Die Planungen zielen darauf ab, Bedingungen für die Entwicklung komplexer integrierter Programme der Wiedergewinnung und Entwicklung der wichtigsten Spuren und Zeichen zu schaffen, die «an geschichtliche Perioden und Orte sowohl der Gegenwart als auch der Vergangenheit erinnern, um Wiederentdeckung und Entwicklung zu unterstützen, mitunter auch die Wiederfindung visueller, funktionaler und ökologischer Verbindungen».

El objetivo principal del programa de saneamiento del Tiber es acercar otra vez la ciudad al río. La distancia creada en el siglo veinte, el desuso y el abandono del sistema fluvial, paradójicamente permitió la conservación de buena parte del material que puede actualmente ser reutilizado en nuevos proyectos de calidad. Malecones, muelles, plantas industriales, zonas abandonadas o en desuso, instalaciones hidráulicas, espacios abiertos, restos arqueológicos, casi todo olvidado completamente por la ciudad, se convierten ahora en recursos importantes y en un gran patrimonio para la restauración de la ciudad y su río. Los objetivos del plan son crear las condiciones para desarrollar programas complejos e integrados de saneamiento y desarrollo de los vestigios y señales más importantes «que evocan los períodos y lugares históricos tanto recientes como de un pasado lejano para fomentar el redescubrimiento y la evolución, lo que significa, a veces, una reinvención de los vínculos visuales, funcionales y ecológicos».

Le principal objectif du programme de réhabilitation du Tibre est de permettre à la ville de se réapproprier son fleuve. Paradoxalement, l'éloignement créé au 20ème siècle, la mauvaise exploitation et le mauvais entretien du système fluvial ont permis la conservation d'une grande quantité des matériaux que l'on pourra maintenant réutiliser pour de nouveaux projets de qualité. Les jetées, les pontons, les usines industrielles, les zones abandonnées ou sous utilisées, les équipements hydrauliques les espaces libres, les vestiges archéologiques, tous pratiquement totalement oubliés par la ville, redeviennent d'importantes ressources et un fabuleux patrimoine pour la régénération de la ville et de son fleuve. Le plan vise à créer les conditions nécessaires pour la conception de programmes complexes et intégrés de réhabilitation et d'aménagement des vestiges et des signes les plus importants «qui évoquent les périodes de l'histoire et les lieux du passé à la fois récent et bien plus lointain afin de favoriser la redécouverte et l'évolution, avec parfois une nouvelle invention des liens visuels, fonctionnels et écologiques».

Tiberi taashõive programm, mis sai alguse uuest Rooma maakasutusplaanist, on pikaajaline protsess ja koosneb paljudest hajutatud strateegilistest sekkumistest, mille abil linnavalitsus peab järk-järk essurss.
(Footnotes)
1 C. Gasparrini, La costruzione del piano. Strategie, regole e progetti per la città storica, "Urbanistica", 116, 2001, p. 102.

Strasbourg

1. Introduction

It is a cross-border landscape park linking the towns of Strasbourg and Kehl, cities bordering the banks of the Rhine. The two parts of the park are connected by a footbridge which makes it possible for visitors to pass freely from France to Germany or from Germany to France. The park will also host "the Festival of the Two Banks", which will be a "Landesgartenshau" on the German side. The inauguration is scheduled for April 23, 2004.
The project involves several professional groups: the BROSK group for landscape, AGIRBAS for town planning, and the WINSTOER architecture studio. M. Mimram is responsible for the construction of the footbridge. This park is on the banks of the Rhine, the most important navigable artery in Europe, serving Switzerland, eastern France, part of Germany and the Netherlands.
This innovative approach will renew the economic role of the Rhine and will integrate it fully into an environment intended for relaxation, walks, and leisure in general. The Garden of the Two Banks is on Navigation property and the change in management will allow the Town of Strasbourg to transfer management elsewhere without modifying the property but introducing the payment of royalties to the owner.

*2. Method_*

The territory of the Garden of the Two Banks includes old industrial waste lands, the harbour zone and old army grounds next to the river. So there was a true no-man's-land on this site between the town centre and the border. Various projects are programmed to rehabilitate the area in the short term:

GENERAL INFORMATION	
Case Title:	Jardin des Deux Rives
City:	Strasbourg (France) and Kehl (Germany)
Country:	France and Germany
Region:	Alsace
Population:	About 415000 inhabitants
Name of the river:	Rhine
Contacted organisations:	Urban Community of Strasbourg
Postal address:	1 place de l'Etoile 67000 Strasbourg
Tel, fax, e-mail:	03 88 60 90 90
Names of contacts:	Mr. TISSIER Mr. KARCHER

- After the Place de l'Etoile: the City of Music and Dance, a project still in progress; the Star passages, still in project form; municipal files, in progress; a large library, still in project form; the City of Sciences, in progress;
- Other spaces are about to be developed: the harbour zone and the Door to France, which is the subject of an urban study.

In addition, projects such as the arrival of the TGV and its passage through Germany, the arrival of the tram in Kehl, the construction of a by-pass skirting the city to the east, will strongly modify this area in the next ten years. The Garden of the Two Banks constitutes the final element of this urban project as an expression of its crossborder character.
On the Kehl side, the most important installations are the Schmidt Villa, close to the Bridge of Europe, and the site of an old access road to the customs zone and the port. Work is also underway on the reconstitution of the rose garden. The Garden of the Two Banks is a major town planning operation for Kehl, which will modify the image of the city (the old barracks and the customs area).
Work on the footbridge began on February 1, 2003, and will continue until March 2004, just before the opening of the Garden Festival envisaged in April.

3. Objectives

The objectives are both touristic and cultural. Touristic, first of all, because it makes the site gravitational by creating a special space in direct contact with nature at the heart of the great metropolis of Strasbourg. The project of the Garden of the Two Banks envisages the construction of a bridge, barges and a shuttle to cross the river by water. The plans also reveal long promenades along the banks of the Rhine with restoration, playgrounds and rest areas. The goal is also to attract the inhabitants of Kehl and neighbouring cities towards the largest area of the park on the French side.
It is also cultural because the Garden of the Two Banks will be a European meeting place due to its particular localisation. Indeed, it will encourage an exchange of cultures, languages, tastes and will make it easier for the inhabitants of Strasbourg and Kehl and their surroundings to cross the river. It will host a festival: "the Festival of the Two Banks", during which an art contest will be organised.

SOURCES USED	
Website:	Strasbourg.fr ; festivaldesdeuxrives.com ; kehl.de ; lgs-kehl.de
Publication:	-
Plan:	See plans attached
Project:	Jardins des Deux Rives
Magazine:	-
Newsletter:	See website
Other:	-

The jury will indicate five installations intended to be maintained on the spot after the festival closure, to make it possible for walkers to discover some art works during their walks. At each end of the promenades, the places intended for rest or restoration could accomodate cultural events (musical animations, exhibitions, etc...).

4. Results obtained

The inauguration is programmed for April 23, 2004, so it is obviously impossible to describe results as yet. It will be possible to formulate a first assessment on the use of the site and to see whether the objectives are achieved at the end of the year 2004.

5. Comments

The project of the Garden of the Two Banks corresponds rather well to the actions started in some European cities, linked by a European movement: the Riverlinks project. The park proposes a new vision of the river and offers a possibility for the residents to reconquer the banks of the Rhine, for example by creating more paths through the river meadows. The innovation is that the project involves two cities, whereas the Riverlinks projects usually relate to one city and its river. However, these two cities are located each side of a natural border-the river. This garden thus reveals an important work of dialogue and international co-operation, which constitutes an excellent example for other cities with organisational difficulties. This transforms the Rhine from a border into the unifying feature between Strasbourg and Germany.
The creation of observation posts over the river, the footbridge and the walks constitute different ways to bring a new vision to a river which offers views and sights of exceptional quality. A barge in dock for exhibitions will encourage frequentation of the site. Sophisticated and effective lighting will give visitors the opportunity to benefit from the Garden of the Two Banks in the evening as well.

Aerial view of the site of the Garden of the Two Banks (source: www.kehl.de)
View of the footbridge linking the two parts of the park (source: www.kehl.de)
Example of work on the bank (source: www.kehl.de)

General plan of the Garden of the Two Banks, the French side

View of the two sides (source: www.kehl.de)

6. Synthesis sheet

Case	High	Medium	Low	Absent
Ferry services, historic boats			*	
Cafés, restaurants		*		
Harbours and marinas				*
Parks and promenades	*			
Cycle routes	*			
Sports activities			*	
Artificial lighting systems	*			
Theatres, museums, science centres				*
Water quality measures		*		
Water management options		*		
Housing and offices				*
Reduced motorised traffic, parking		*		
Integrated masterplan				*
Art and sculptures	*			
Temporary markets and festivals	*			
Facilities for children, the elderly and disabled	*			

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Summaries

Questo è un parco paesaggistico di confine che mette in collegamento le città di Strasburgo e Kehl, situate sulle rive opposte del Reno. Le due parti del parco sono collegate da un ponte per soli pedoni. I visitatori possono quindi passare liberamente dalla Francia alla Germania e viceversa. Il territorio del "Giardino delle due rive" comprende una zona in cui prima sorgevano discariche di rifiuti industriali, la zona del porto e un campo per esercitazioni militari vicino al fiume.
Si trattava perciò di una specie di terra di nessuno fra il centro della città e il confine. Gli obiettivi del progetto sono sia turistici che culturali. Turistici in quanto esso vuole fare del sito un punto di attrazione creando uno spazio speciale a diretto contatto con la natura nel cuore di una grande metropoli come Strasburgo.
Il progetto prevede la costruzione di un ponte, chiatte e una navetta per attraversare il fiume sull'acqua e, inoltre, passeggiate lungo le rive del Reno con punti di ristoro, campi gioco e aree per il riposo. L'obiettivo è anche quello di attrarre gli abitanti di Kehl e città vicine verso la grande area del parco sul lato francese.
Culturali perché il Giardino delle due rive sarà ,grazie alla sua significativa localizzazione un luogo di incontro

Ein grenzüberschreitender Landschaftspark verbindet die an die Rheinufer angrenzenden Städte Strasbourg und Kehl. Die beiden Teile des Parks sind durch eine Fußgängerbrücke verbunden, di es den Besuchern ermöglicht, frei zwischen Deutschland und Frankreich zu pendeln.
Das Gebiet des "Gartens der zwei Ufer" (Garden of the Two Banks) umfasst am Fluss gelegene Industriebrachen, das Hafengebiet und ehemalige militärisch genutzte Flächen. Dies war ein wirkliches Niemandsland zwischen dem Stadtzentrum und der Stadtgrenze.
Das Projekt beinhaltete sowohl touristische als auch kulturelle Zielstellungen:
In touristischer Hinsicht entfaltet der Park eine Anziehungskraft durch die Schaffung eines besonderen Raumes in direkter Verbindung zur Natur inmitten des metropolitanen Strasbourg. Das Projekt beabsichtigt den Bau einer Brücke, den Betrieb von Kähnen und Fähren, die den Fluss überqueren sowie ausgedehnte Promenaden der Rheinufer mit Restaurants, Spiel- und Rastplätzen. Beabsichtigt wird ebenso, den größeren Teil des Parks auf der französischen Seite für die Einwohner von Kehl und benachbarter Gemeinden attraktiv zu machen.

Der kulturelle Aspekt besteht in der Bedeutung des "Gartens der zwei Ufer" als europäischer Treffpunkt entsprechend seiner besonderen Lage.
Es un parque paisajístico limítrofe que une las ciudades de Estrasburgo y Kehl, ciudades que bordean las orillas del Rin. Ambas partes del parque están conectadas mediante un puente peatonal que hace posible a los visitantes pasar libremente de Francia a Alemania y de Alemania a Francia. El territorio del Jardín de las Dos Orillas incluye terrenos baldíos industriales, una zona portuaria y unos terrenos del ejército junto al río. De forma que había realmente una "tierra de nadie" en este emplazamiento entre el centro de la ciudad y el límite. Los objetivos del proyecto son turísticos y culturales. Turísticos porque hacen que el emplazamiento gravite creando un espacio especial en contacto directo con la naturaleza en el corazón de la gran metrópolis de Estrasburgo. El proyecto prevé la construcción de un puente, barcazas y una lanzadera para cruzar el río por agua así como largos paseos junto a las orillas del Rin con restaurantes, zonas de juego y áreas de descanso. El objetivo es también atraer a los habitantes de Kehl y ciudades vecinas hacia la gran zona del parque en la parte francesa.
Es también cultural porque el Jardín de las dos Orillas será un lugar de encuentro europeo debido a su particular localización.

Il s'agit d'un parc paysagé transfrontalier qui relie les villes de Strasbourg et de Kehl sur les rives opposées du Rhin. Les deux parties du parc sont liées par une passerelle permettant aux visiteurs de passer à volonté de la France en Allemagne ou vice-versa. Le territoire du Parc des Deux Rives comprend des friches industrielles, la zone portuaire et le terrain militaire à côté du fleuve. Il y avait donc un véritable no-man's-land sur ce site entre le centre de la ville et la frontière. Les objectifs du projet sont à la fois touristiques et culturels. Touristiques, car le site devient un pôle d'attraction avec la création d'un espace particulier directement en contact avec la nature au cœur de la métropole de Strasbourg. Il est prévu de construire un pont et de mettre à disposition des chalands et une navette pour traverser le fleuve sur l'eau ainsi que des esplanades le long des rives du Rhin, avec des guinguettes, des aires de jeux et de repos. Le but est également d'attirer les habitants de Kehl et des villes voisines vers la partie la plus grande du parc du côté français.
Le projet est également culturel car le Parc des Deux Rives, grâce à sa situation privilégiée, constituera un lieu de rencontres européen.

"Kahe kalda aia" territooriumile jäävad vanad tööstuslikud tühermaad, sadamapiirkond ning vanad jõeäärsed sõjaväealad. Seega asus kesklinna ja linnapiiri vahel tõeline eikellegimaa. Selle ala kiireks taaselustamiseks on kavandatud mitmeid projekte:
– Place de l'Etoile taha: Muusika ja tantsu linn – projekt on veel pooleli; Tähiskäigud – alles projekti kujul; linnaarhiiv – pooleli; suur raamatukogu – alles projekti kujul; Teaduslinn – pooleli;
– planeeritud on ka teiste alade arendamine: sadamapiirkond ning "Uks Prantsusmaale", mille arendamine sõltub linnauuringust.

Torino

1. Introduction

Turin covers roughly thirteen thousand hectares and possesses sixteen million square metres of public open space. Its more recent urban developments are closely linked to the rivers which flow through it. The extension of the urban development includes the presence of four rivers: the Po and its three affluents, the Sangone, the Dora Riparia and the Stura di Lanzo, similar to teeth in a comb in relation to the main river.
The four rivers were progressively "engulfed" and regimented by the city's uncontrolled expansion, particularly since the war. They have been an important feature of the urban landscape since Turin's birth, but they kept a certain distance from the city until the beginning of the XIXth century.
The city and the metropolitan area around it, is studded with open spaces and Sabaudian residences (such as Stupinigi, Rivoli, Venaria, Valentino, etc.) with the Alps as a natural backdrop.
The project was approved by the Administration in 1993 and defined as a sort of green city river plan by its promoters. It was approved together with the Land Use Plan the following year. Already in the preliminary town planning studies, two vital subsystems for the city's open spaces were identified: the Green-Blue System and the Green Ring.

GENERAL INFORMATION	
Case Title:	Turin, City of Water
City:	Turin
Country:	Italy
Region:	Piedmont
Population:	950.000 inhabitants (2001)
Name of the river:	Po, and its tributaries Sangone, Stura di Lanzo, Dora Riparia
Contacted organisations:	Turin Municipality, Public Parks Department New Projects
Postal address:	Via Cottolengo 26, Torino
Tel, fax, e-mail:	gabriele.bovo@comune.torino.it
Names of contacts:	Gabriele Bovo, Turin, City of Water Coordinator and Project Manager

The Po from the San Mauro Torinese hill (photograph by Laura Sasso)

2. Method

The programme of planned developments is a full one. In 1988 the Turin Municipality created the Public Open Spaces Sector, New Developments with its own office to control the development of the project Turin City of Water, under the Public Open Spaces Sector, to optimise municipal energy and resources.
Various groups were set up to cope with the heavy work load; municipal technicians as well as external professionals and researchers.

SOURCES USED	
Website:	www.comune.torino.it/ambiente/verde
Publications:	TOWN PLANNING DEPARTMENT, TURIN, Il P.R.G. e Allegati tecnici., Turin 1993. ENVIRONMENT AND MOBILITY DIVISION, TURIN, "Agenda ventuno. Rapporto sullo stato dell'ambiente e sulla sostenibilità della Città di Torino", year 1999. I.P.L.A., ENVIRONMENT AND MOBILITY DIVISION, TURIN OPEN SPACES SECTOR – NEW DEVELOPMENTS, "Studio sulla fauna delle aree fluviali", Turin, October 1999. PIEDMONT REGION, PARKS AND NATURE RESERVES SYSTEM, "Corona verde. Città intorno ai parchi", Programmed document adopted by the Managers of Turin's suburban parks. PIEDMONT REGION, PARKS AND NATURE RESERVES SYSTEM, "Studio di fattibilità del progetto Corona Verde". PIEDMONT REGION, "La capacità d'uso dei suoli piemontesi ai fini agricoli e forestali", I.P.L.A., 1982 PIEDMONT REGION, PO RIVER PARK TURIN TRACT, "Piano d'area del sistema delle aree protette della fascia fluviale del Po. Relazione generale". WATER RESOURCES S.P.A., DEPARTMENT OF THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT, "Azioni per il recupero qualitativo dei corsi d'acqua cittadini", Turin, March 1999.
Plan:	-
Project:	-
Magazine:	-
Newsletter:	-
Other:	-

The Mole Antonelliana from the Po-Stura confluence (photograph by Laura Sasso)

The first approach consisted of the following preliminary studies:

- Studies to restore water quality;
- Plan of the fauna of the four rivers;
- Study of the ecological shaping of the landscape;
- Working plan of environmental reclamation in the Basse di Stura;
- Plan of the Po area.

These instruments of research have shown the potentials as well as the critical environmental and landscape situation which showed the urgent need for the constitution of an ecological network with reference to the city and the region.

The Po-Dora confluence from the right bank of the river (photograph by Laura Sasso)

The guidelines of the programme are interconnected to other planning and town planning objectives, with the following fundamental references:

- Plan of the Turin Park Authorities area;
- Po River Basin Authorities Provisional Plan;
- International Turin Project;
- Special suburban project;
- Institutional activity of the Municipal Water Society Turin s.p.a.

The right bank of the Po in the Colletta Park in autumn (photo by Laura Sasso)

The site of the old Viboccone Park from the Po-Stura confluence (photograph by Laura Sasso)

In 1999, a *Masterplan* was produced on the basis of studies into the landscape and ecological-environmental values of the territory, which gave reference points to all the developments according to their individual sites.

3. Objectives

Turin City of Water consists of a plan of action, which aims to achieve quality objectives in two different levels of intervention: urban and regional.
On the urban level, the main objective consists of the creation of a continuous system of river parks, for an overall development of about 75 km. The Torinese banks of the four rivers (Po, Sangone, Dora Riparia, Stura) are connected by a network of leisure and educational footpaths and cycle tracks and become the basis of a new urban system of open space.
On a regional scale, the objective is the constitution of an integrated system of parks between the open spaces in the city centre and the more naturalistic areas of the large parks in the hills and suburbs involving the regional suburban parks of the *Green Crown.*
The main strategies chosen to reach these objectives are:

– Reclamation of the polluted banks and their transformation into public parks;
– Enlargement of the overspill basins, development of monitoring and control during flooding, consolidation of eroded banks;
– Incrementation of touristic river transport and sports and leisure facilities in suitable tracts of the four rivers;
– Use of techniques and materials with low impact and environmental compatibility, also with the use of experimental sites;
– Differentiated management of future open spaces;
– Involvement of environmentalist associations in managing areas with natural resources to be protected;
– Improvement of the biochemical quality of the water, with more filtering programmes for upstream discharges into the river and increase in biodiversity.

4. Results obtained

Work is in progress on the projects approved in the *Masterplan*.
It is possible to outline the developments already activated, referring to interventions underway or already done, distinguishing three main existing typologies:

1.
– *Meisino Park*: development of a protected area between the river and built-up areas;
– *Zoo Park*: reconversion of the zoo into a public park;
– *Via Calabria River Park*: creation of a park area in a river environment, along the right bank of the Doria River;
– *Spina 3 Park*: Reclamation of a disused industrial area;
– *Laghetti Falchera Park*: construction of a new park with allotments and facilities for leisure activities;
- *Sangone Park*: environmental recovery and urban park development;
– *Stura North and South Park*: improvement of the existing public open space and reclamation of the river tracts.

2. Reclamation projects for the river banks:
– *Fioccardo Banks*: river bank evaluation;
– *River Moorings*: reclamation of the moorings along the Po, to increase tourist traffic;
– *Murazzi – Colletta Banks*: improvement of the open spaces and an urban tract on the left bank of the Po;
– *Banks between the Umbria and Potenza*: Reclamation of the Dora river banks.

3. River resource development projects:
– *Stura Park:* upgrading of the banks;
– *Arrivore Park*: reclamation of the banks.

5. Comments

The major criticisms concern the difficulties in applying the recent regulations regarding Italian public works (Merloni Law and its Regulations for Implementation) to the reclamation of the river environment. Various authors (G. Bovo,

[1] G. Bovo, *Espansione programmata*, in «Acer», 1/2001, pp. 45-49, p. 49.

The river Po from the left bank on the southern boundary with Moncalieri (photograph by Laura Sasso)

2001; P. Odone 2003) stress that these regulations "make functional sense for great civil engineering works, but create difficulties and delays in designing river environments in continuous structural and dimensional evolution as well as for the status quo" [1].

Open spaces along the rivers in the city need to be improved in order to achieve the objectives of the project. Some of the means foreseen by the Land Use Plan could involve the purchase of land compensation, expropriation or voluntary transfer of building rights.

Another interesting aspect is the participation of naturalist associations in the management of the reclaimed nature areas (following the example of Pro Natura Torino).

The river Po from the left bank. Canoeing (photograph by Laura Sasso)

6. Synthesis sheet

Case	High	Medium	Low	Absent
Ferry services, historic boats		*		
Cafés, restaurants			*	
Harbours and marinas				*
Parks and promenades	*			
Cycle routes	*			
Sports activities		*		
Artificial lighting systems			*	
Theatres, museums, science centres			*	
Water quality measures	*			
Water management options		*		
Housing and offices		*		
Reduced motorised traffic, parking		*		
Integrated masterplan	*			
Art and sculptures				*
Temporary markets and festivals				*
Facilities for children, the elderly and disabled		*		

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Summaries

Torino Città d'Acque, come si è visto, comprende un programma articolato di interventi, finalizzati all'attuazione di obiettivi di qualità tarati rispetto a due distinte scale di attuazione: urbana e territoriale. A scala urbana, l'obiettivo fondamentale consiste nella creazione di un sistema continuo di parchi fluviali, per uno sviluppo complessivo di circa 75 km. Attraverso una rete di percorsi pedonali e ciclabili, a valenza ricreativa e didattica, le fasce spondali degli ambiti urbani torinesi dei quattro fiumi cittadini (Po, Sangone, Dora Riparia, Stura) vengono collegate e diventano la struttura portante di un nuovo sistema urbano degli spazi aperti.
A scala territoriale, l'obiettivo è la costituzione di un sistema integrato di aree a parco tra gli spazi aperti cittadini della porzione urbana centrale e gli ambiti a carattere più naturale dei parchi estensivi, collinari e periferici, fino a interessare i parchi regionali della fascia periurbana che costituiranno la Corona Verde.
Le principali strategie individuate per raggiungere gli obiettivi prefissati possono essere così sintetizzate: interventi di bonifica delle fasce spondali inquinate e loro trasformazione in aree a parco pubblico; incremento dei bacini di esondazione, sviluppo di attività di monitoraggio e controllo delle fasi di piena, consolidamento degli argini in erosione; potenziamento del trasporto fluviale turistico e delle attività sportive e ricreative su tratti idonei dei quattro fiumi.

Das Vorhaben Turin-Stadt des Wassers stellt ein Handlungsprogramm dar, das die Erreichung qualitativer Ziele auf städtischer und regionaler Ebene beinhaltet.
Auf städtischer Ebene ist das Hauptziel die Schaffung eines durchgehenden Systems von flussbegleitenden Parkanlagen auf einer Gesamtlänge von etwa 75 km. Die Turiner Ufer von vier Flüssen (Po, Sangone, Dora Riparia, Stura) werden durch ein Netzwerk von Spazierwegen und Lehrpfaden sowie Radwegen verbunden und somit zur Grundlage eines neuen städtischen Freiraumsystems.
Auf der regionalen Ebene wird die Schaffung eines Parksystems zwischen den Freiräumen im Stadtzentrum und den naturbelasseneren Gebieten des angrenzenden Hügellandes und der Vorstädte unter Einschluss der regionalen Parkflächen der "grünen Krone" (green crown) beabsichtigt. Das Projekt beinhaltet ebenso die Sanierung und Wiedergewinnung von mit umweltgefährdenden Stoffen belasteter Uferflächen unter Verwendung eingriffsarmer, umweltverträglicher Verfahren und Materialien sowie die Verbesserung der biologischen und chemischen Wasserqualität und die Hochwasserbeobachtung.

Turin Ciudad del Agua es un plan de acción destinado a lograr objetivos de calidad en dos niveles distintos de intervención: urbano y regional. En el plano urbano, el principal objetivo es la creación de un sistema continuo de parques fluviales, para un desarrollo global de unos 75 km aproximadamente. Las orillas turinesas de los cuatro ríos (Po, Sangone, Dora Riparia, Stura) están conectadas mediante una red de ocio y de senderos educacionales y carriles de bici y se convierten en la base de un nuevo sistema urbano de espacios abiertos. A escala regional, el objetivo es la constitución de un sistema integrado de parques entre los espacios abiertos del centro de la ciudad y las zonas más naturales de los grandes parques en las colinas y suburbios, incluyendo los parques suburbanos regionales de la Corona Verde. El proyecto implica el saneamiento de las orillas contaminadas y su consolidación, utilizando técnicas y materiales de bajo impacto y compatibilidad medioambiental así como la mejora de la calidad bioquímica del agua y el control de inundaciones.

Turin Ville d'Eau est un plan d'action qui vise deux objectifs de qualité à deux niveaux d'intervention différents – urbain et régional. Au niveau urbain, l'objectif principal est la création d'un système ininterrompu de jardins d'eau avec un aménagement global sur une distance d'environ 75 km. Les rives turinoises des quatre fleuves (Po, Sangone, Dora Riparia, Stura) sont reliées par un réseau de sentiers et de pistes cyclables à la fois ludiques et pédagogiques formant la base d'un nouveau système urbain d'espaces.
Au niveau régional, l'objectif est la constitution d'un système intégré de grands espaces verts entre les espaces du centre ville et les zones plus naturelles des grands parcs dans les collines et l'agglomération comprenant les parcs régionaux de la Couronne Verte. Le projet nécessite la régénération et la consolidation des rives polluées à l'aide de techniques et de matériaux n'ayant qu'un faible impact et une compatibilité environnementale ainsi que l'amélioration de la qualité biochimique de l'eau et le contrôle des inondations.

Projekt Torino veelinn koosneb tegevusplaanist, milles püstitataks eesmärke kahel tasandil: linn ja regioon.
Linna tasandil on põhieesmärgiks ühendatud jõeparkide süsteemi loomine, mis hõlmaks kokku umbes 75 km. Nelja jõe (Po, Sangone, Dora Riparia, Stura) Torino piirkonnas asuvad kaldad on ühendatud puhke- ja õpperadade ning jalgrattateede võrguga ning nendest saab uue avatud linnaruumi süsteemi alus.
(Footnotes)
1 G. Bovo, Espansione programmata, in Acer 1/2001, pp. 45- 49. Pag. 49.

Wien

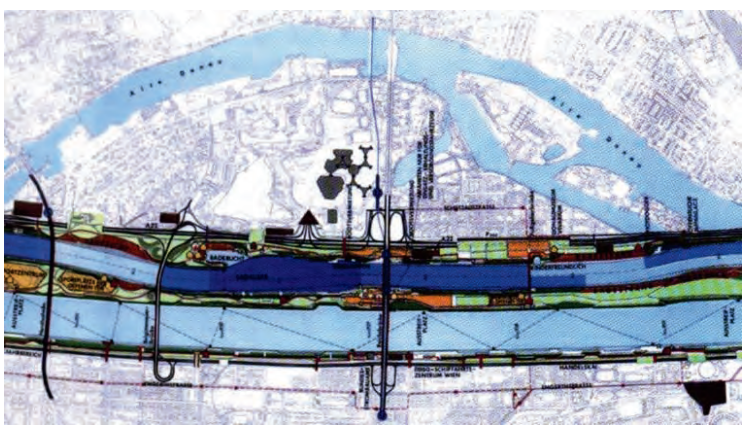
1. Introduction

In Austria, River Danube

Length:	approx. 350 km
Head:	approx. 40 cm per km
Total head:	155 m
Fluctuations in level:	up to 8 m
Free-flowing sections	
East of Vienna:	47 km

Most flooding occurs from late spring until the height of summer as the snow melts in the mountains, but floods can be expected all year round whenever there are excessive precipitations

The Vienna Danube Canal has been, and continues to be, a navigation route of major importance. The word "canal" is slightly misleading as the water is fast flowing and deep and until recently formed one of the main arms of the river known as the "Viennese arm" or "Viennese water". Urban development in the 19th century imposed regulations on the arm of the river and a new bed was built with stone banks and high quay walls. Tracks for the city train and modern traffic routes were laid alongside the canal banks. Weirs and sluices at Nussdorf, for regulation of the water, have turned this stretch into something like a canal and have helped to keep flooding of the inner city at bay.



GENERAL INFORMATION	
Case Title:	Danube Island
City:	Vienna
Country:	Austria
Region:	Wachau
Population:	1 600 000
Name of the river:	Danube
Contacted organisations:	City of Vienna
Postal address:	-
Tel, fax, e-mail:	-
Names of contacts:	-

SOURCES USED	
Website:	http://unal.tuwien.ac.at/paginas/jeanpierre/html/theDonauInsel.html http://www.aquamedia.at/templates/index.cfm/id/656 http://www.wien.gv.at/english/mib/citydanube.htm http://info.wien.at/article.asp?IDArticle=9446
Publication:	-
Plan:	-
Project:	-
Magazine:	-
Newsletter:	-
Other:	-

2. Method

Hydraulic research, planning instruments

3. Objectives

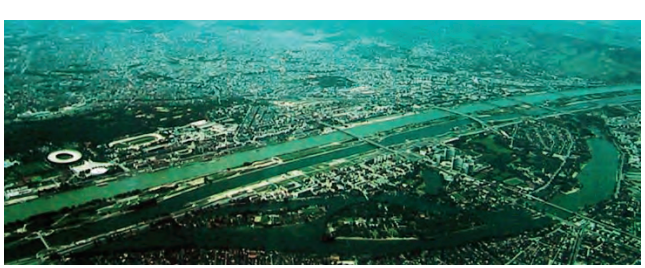
Suffers from flooding, possibility of flooding all year round. Freight transport, hydroelectricity, water supplies, irrigation, and fishing are all found on the Danube.
Many river cruises on the River Danube.
There is a website 'The Danube River Basin'. All countries lying along the Danube, will celebrate Danube day on June 29th 2004 in Vienna

4. Results obtained

The new construction divides the Danube into main stream and New Danube and is operated only in case of floods. In periods without flooding, two further weirs guarantee horizontal water levels in the New Danube so that it acquires a lake-like character. The New Danube also has a system of secondary dams. The essential elements are the flood protection dam on the left bank of the New Danube, the "Right Danube Dam" on the right bank of the Danube and the confinement dams of the port facilities. In the case of a flood, maximally 14,000 m3/sec can be drained off without damage.
The Danube Island was a by-product of the creation of an overflow facility to control water levels in time of flood. The Danube Island and the New Danube have become a unique recreational and leisure spot regarding size and accessibility from the city centre. The city administration plans to keep this area accessible for the population without restrictions (as far as possible) and free of charge. The Danube Island has become a success story where nature, recreation and flood protection have found a symbiotic relationship
Some 2.5 million visitors arrive for the Danube Island Festival held in June each year, Europe's largest youth party. But the "island" has a lot else to offer: 42 kilometres of sand, gravel and grassy beaches on the New Danube, bathing bays, (ball) playgrounds, level running and skating routes, boat, cycle and surfboard hire, extensive nudist areas, bars, cafés and restaurants on Copa Cagrana. Vienna's recreation paradise has much to offer!

5. Comments

Strengths of the Danube Island project:
- An appropriate long-term "total flood protection" for Vienna.
- The existing flood regulation structures were raised by minor amounts.
- The Neue Donau will be of bathing quality the Donauinsel will act as a filter.
- An easily accessible recreation area of over 400 hectares created in the middle of the urban area.
- Drinking water could be recovered due to the flood-free nature of the island.
- Construction of a Vienna power station would still be possible.
- Environmental conditions in the Donau remain unchanged.
- Navigation not obstructed.
- The flood protection structures on the left bank perform valuable noise reduction functions for the A22 motorway.
- The river, Neue Donau, the island and the respective river banks would be treated as a unity.
- Development on the island would remain in scale with the landscape, paying special attention to the existing elements of the characteristic riverscape.
- The island is primarily for recreational/leisure uses.
- Space for urban development and residential areas would have been incompatible with the overriding purpose of a recreation area.
- The area will be assigned a key role as a major link in the city centre-Kagran axis.
- Good accessibility to the new recreational areas (public transport) will be guaranteed, as will public access to the river banks (bridges with footpaths and cycle paths)



6. Synthesis sheet

Case	High	Medium	Low	Absent
Ferry services, historic boats	*			
Cafés, restaurants	*			
Harbours and marinas	*			
Parks and promenades	*			
Cycle routes		*		
Sports activities		*		
Artificial lighting systems		*		
Theatres, museums, science centres		*		
Water quality measures	*			
Water management options	*			
Housing and offices				*
Reduced motorised traffic, parking	*			
Integrated masterplan		*		
Art and sculptures		*		
Temporary markets and festivals	*			
Facilities for children, the elderly and disabled		*		

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Summaries

La nuova costruzione divide il Danubio in corso principale e Nuovo Danubio ed entra in azione solo in caso di piena. In periodi non di piena, due sbarramenti garantiscono il livello orizzontale dell'acqua nel Nuovo Danubio che in tal modo assume le caratteristiche di un lago. Il Nuovo Danubio ha inoltre un sistema secondario di dighe. Gli elementi essenziali sono la diga per la protezione contro le inondazioni sulla riva sinistra del Nuovo Danubio, la "Diga destra del Danubio" sulla riva destra del Danubio e le dighe di protezione delle installazioni portuali.
In caso di inondazione, un massimo di 14.000 metri cubi di acqua al secondo possono essere smaltiti senza provocare danni. L'isola Danubio è il prodotto derivato dalla creazione di un sistema di controllo del livello del fiume in tempo di piena. L'isola e il Nuovo Danubio sono diventati un'unica struttura per il tempo libero e il divertimento accessibile dal centro cittadino. L'amministrazione comunale progetta di mantenere aperta questa area alla popolazione senza restrizioni (per quanto possibile) e gratuitamente. L'isola del Danubio è la storia di un successo; in essa la natura, la ricreazione e la protezione dalle inondazioni hanno trovato una relazione simbiotica.

Eine neuartige Konstruktion, die nur im Flutfall betrieben wird, teilt die Donau in den Hauptstrom und die sogenannte "neue" Donau. In hochwasserfreien Perioden gewährleisten zwei weitere Wehre gleichmäßige Wasserstände in der "neuen" Donau, so dass diese einem Standgewässer ähnelt. Die "neue" Donau ist weiterhin von Sekundär-Dämmen umgeben. Die wesentlichsten Elemente dieses Systems sind der Flutschutzdamm am linken Ufer der neuen Donau, der "Rechte Donaudamm" am rechten Ufer der Donau und Absperrvorrichtungen an den Hafenanlagen. Im Flutfall können maximal 14.000 m²/s schadlos abgeführt werden. Die Donau-Insel war ein "Nebenprodukt" des Baus einer Überlauf-Einrichtung zur Steuerung der Wasserstände während Hochwasserereignissen. Die Donau-Insel und die "neue" Donau entwickelten sich zu einem einzigartigen Erholungsgebiet hinsichtlich Größe und Erreichbarkeit vom Stadtzentrum. Die Stadtverwaltung beabsichtigt, dass dieses Gebiet soweit wie möglich ohne Restriktionen und kostenfrei der Bevölkerung zugänglich bleibt. Die Donau-Insel ist eine "Erfolgsgeschichte", wo Natur, Erholung und Hochwasserschutz eine symbiotische Beziehung gefunden haben.

La nueva construcción divide el Danubio en el brazo principal y el Nuevo Danubio y funciona sólo en caso de inundación. En períodos sin inundaciones, dos presas garantizan los niveles horizontales del agua en el Nuevo Danubio de forma que adquiere el carácter de lago. El Nuevo Danubio cuenta además con un sistema de embalse secundario. Los elementos esenciales son la presa de protección contra inundaciones en la orilla izquierda del Nuevo Danubio, la "Presa Derecha del Danubio" en la orilla derecha del Danubio y las presas de limitación de las instalaciones portuarias. En caso de inundación, se puede evacuar un máximo de 14.000 m3/seg sin producir ningún daño. La Isla del Danubio fue un subproducto de la creación de una instalación de desagüe para controlar los niveles del agua en tiempos de inundación. La Isla del Danubio y el Nuevo Danubio se han convertido en lugares únicos, recreativos y de ocio en cuanto al tamaño y a la accesibilidad desde el centro de la ciudad. El Ayuntamiento de la ciudad planifica mantener esta zona accesible para la población sin restricciones (en la medida de lo posible) y de forma gratuita. La Isla del Danubio se ha convertido en un elemento de éxito donde se relacionan de forma simbiótica la naturaleza, el ocio y la protección contra las inundaciones.

La nouvelle construction divise le Danube entre le fleuve principal et le Nouveau Danube et ne fonctionne qu'en cas d'inondations. Pendant les périodes sans inondations, deux déversoirs garantissent l'horizontalité des niveaux d'eau dans le Nouveau Danube de sorte qu'il prend l'aspect d'un lac. Le Nouveau Danube est également doté d'un système de barrages secondaires. Les éléments essentiels sont constitués du barrage de protection contre les inondations sur la rive gauche du Nouveau Danube, du «Barrage Droit du Danube» sur la rive droite du Danube et des barrages de confinement des équipements portuaires. Dans le cas d'une inondation, il est possible de drainer jusqu'à un maximum de 14.000 m³/seconde sans dommages. L'Ile du Danube constitue un élément dérivé de la création d'un barrage déversoir pour contrôler les niveaux d'eau en cas d'inondation. L'Ile du Danube et le Nouveau Danube sont devenus un lieu unique de promenades et de loisirs, compte tenu de la superficie et l'accessibilité depuis le centre de la ville. La municipalité envisage de maintenir l'accessibilité de cette zone aux habitants sans restrictions (dans la mesure du possible) et gratuite. L'Ile du Danube est une belle réussite où la nature, les loisirs et la protection contre les inondations ont trouvé une véritable symbiose.

Uue rajatisega on Doonau jagatud põhijooksuks ja Uus-Doonauks, mida kasutatakse üksnes üleujutuste korral. Perioodidel, mil üleujutusi ei esine, hoitakse Uus-Doonau veetaset kahe ülevoolupaisu abil, nii et sellest tekib midagi järvetaolist. Lisaks on Uus-Doonaul ka sekundaarsete tammide süsteem. Põhielementideks on Uus-Doonau vasakul kaldal asuv üleujutuskaitse tamm, Doonau paremal kaldal paiknev "Doonau paremtamm" ning sadamarajatiste veetõkketammid. Üleujutuse korral on võimalik ilma kahjudeta ära juhtida maksimaalselt 14000 m³ sekundis.

Köln

1. Introduction

The Rhine is one of the largest rivers in Central Europe. The 1,320 km river links the Alps with the North Sea. The source is located in the Swiss Canton Graubünden, in the St. Gotthard Massif, near Andermatt and Airolo. The estuary has a gigantic river delta (approx. 25.000 km²) in the Netherlands. The total basin area of the Rhine comprises an area of about 185.000 km² (of which roughly 100.000 km² are in Germany). The following 9 countries share administration of the Rhine basin area: Switzerland, Italy, Austria, Liechtenstein, Germany, France, Luxembourg, Belgium and the Netherlands. The Rhine and its tributaries are used for power generation, navigation and tourism. The rivers Aare, Neckar, Main and Mosel are the main tributaries. Traditionally the Rhine is divided into 6 sections, see table 1.

Table 1: Sections of the Rhine

Section of the Rhine	Stretch	Rhine km	Countries
High Rhine	Constance to Basel	0-170	Switzerland, Germany
Southern Upper Rhine	Basel to Iffezheim	170-334	Germany, France
Northern Upper Rhine	Iffezheim to Bingen	334-529	Germany, France
Middle Rhine	Bingen to Rolandswerth	529-642	Germany
Lower Rhine	Rolandswerth to Lobith	642-857	Germany, Netherlands
Rhine delta	Lobith to estuary (North Sea)	857-1030	Netherlands

GENERAL INFORMATION	
Case Title:	Municipal Action Plan for Flood Protection- Cologne Flood Protection
City:	Cologne
Country:	Germany
Region:	North Rhine-Westphalia
Population:	1.020.603 inhabitants
Name of the river:	Rhine
Contacted organisations:	Stadt Köln, Hochwasserschutzzentrale
Postal address:	Willy-Brandt-Platz 2, 50 679 Köln, Germany
Tel, fax, e-mail:	Tel.: (+49) 0221 / 221-24242 Fax: (+49) 0221 / 221-23183 e-mail: reinhard.vogt@stadt-koeln.de yvonne.wieczorrek@stadt-
Names of contacts:	Herr Vogt Frau Wieczorrek

SOURCES USED	
Website:	http://www.umweltbundesamt.de/rup/hochwasserschutz.htmlhttp://www.stadt-koeln.de/hochwasser/index.html http://www.stadt-koeln.de/zahlen/bevölkerung
Publications:	Stadt Köln, Dezernat für Bauen und Verkehr: „Hochwasserschutzkonzept Köln"; (Köln 1996) -Umweltbundesamt (UBA): UBA F+E 201 16 116 „Sichern und Widerherstellen von Hochwasserrückhalteflächen–Fallstudie Köln" -International Kommission zum Schutze des Rheins (IKSR): „ Rhein, Strom mit Beziehungen"; (Koblenz 1998) -Kasper, M. / Schaaf, O: „Die Geschichte der in Köln–Aqua Colonia"; (Wienand & Heimbüchel GmbH, Köln 2000; i.A. der
Plan:	Hochwasserschutzkonzept der Stadt Köln (Cologne Flood Protection Plan)
Project:	-
Magazine:	-
Newsletter:	-
Other:	-

The area along the river has been settled for a long time. At the beginning of the 19th century approximately 6 million people lived in the Rhine area, now there are about 60 million. Today the Rhine area is one of the most industrialized in the world. During industrialisation people began to settle along the banks, undertake river control and watershed management, build hydroelectric power plants, dykes, etc. Some of the consequences of this urbanization are the disappearance of valuable forms of plants and animals as well as catastrophic floods causing the destruction of property, extensive ecological and cultural damage as well as unimaginable sorrow. One town should be mentioned in the RiverLinks Project which has a great deal of experience in dealing with the consequences of urbanization on the Rhine river, - Cologne!

Cologne is a big city in the western part of Germany, in the North Rhine-Westphalia region at the beginning of the lower section of the Rhine. It is one of the European cities most affected by high water. Since its foundation in 50 B.C. Cologne has been confronted with flood problems, partly because of its natural low lying ford position in front of the Rheinisches Schiefergebirge highlands, in the "Cologne Lowland Bay" (Kölner Tieflandsbucht) and partly because of the aforementioned urbanization measures upstream and in the city itself. In the centre of Cologne the Rhine is canalized and most of the banks are sealed. On the edge of the city, out of the built up areas, the river banks are more natural.

The Rhine metropolis has approximately 1.020.603 inhabitants (2003). Cologne is an important German site for industry, commerce and business (host to numerous international trade fairs, centre for insurance agencies and banks, music and television transmissions, a site for motor and chemical industries, etc.). It also offers many cultural facilities (museums, theatres, opera houses) as well as a lot of historic buildings of different epochs. The most famous and imposing building is the Cathedral.

In order to protect the city and improve the situation along the Rhine on a long-term basis the Town Administration developed the Cologne Flood Protection Plan after the catastrophic floods of 1993 and 1995.

2. Method

After the flood in 1993 the Cologne Town Administration began to improve flood management and founded the Cologne Flood Protection Central Office. During the centenary flood in January 1995 (water level: 10,69 m Cologne Level, discharge: approx. 11.000 m^3/s) the city narrowly escaped a huge disaster. Consequently preparations against flooding began and in 1996 the plan was accepted unanimously by the municipal council. The four main points of the Cologne Flood Protection Plan are:

I. Flood management

- All measures for controlling floods
- Publication of a daily flood forecast over internet, teletext and telephone answering machine, hourly during floods
- Establishment of a Flood Control Centre (with a Flood Coordinating Leader and representatives of participating offices: the fire brigade, police, the Engineering Relief Organization (THW), the German Rescue Society (DLRG), the Armed Forces)
- Coordination of necessary measures dependent on the water level, for example closing flood gates (pump plants), organisation of road blocks, construction of mobile protection elements (sandbags, Aqua Barrier, mobile flood protection gates), provision and distribution of sandbags, organisation of a boat / ferry service, construction of footpaths, etc.
- Introduction of an information centre for inhabitants

(– temporarily: test of digital Flood Information/Management System HOWISS)

II. Supraregional and regional preventive flood protection

- Creation of retention areas in Cologne
- Guidance to cultivation in flood-endangered areas
- Infiltration of rainwater and ground "reseal"
- Renaturalisation of brooks
- Creation of a model bank / model low land area for demonstrating a possible solution with a practical example
- Cooperation with civic action groups and clubs
- Initiatives with the Rhine Flood Misery Community and other institutions, for example with the International Commission for Protecting the Rhine river, in order to implement flood arrangements (courses and symposiums)
- Greater awareness of flood risks and flood prevention (regional, municipal and private flood prevention), for example using flood maps with information

about flood lines, water levels, water depth; flood exhibitions; flood tours in the city on foot or by bike; flood films, pamphlets and leaflets or informative material, etc.

III. Structural flood protection

- Construction and redevelopment of dykes (55 km in Cologne)
- Erection of flood walls and flood protection gates
- Construction of flood gates and flood pump plants
- Improvement of discharge management
- Construction of mobile flood protection elements/equipment
- Reconstruction of power supply installations

IV. Defence, resistance and disaster prevention

- Phase 1: Preparation (practice time)
- Phase 2: Action (precipitation forecast, precipitation event, flood warning, action)
- Phase 3: Utilization and assessment.

For the RiverLinks Project, parts II and III are of the greatest interest. Their preparation and realization were influenced by the following models:

- Geographical Information System (GIS): for the drawing up of flood maps (the basis for defining flood-endangered areas) and preparation of failure scenarios, for example the breaking of dykes:
  - regional policy (municipal and regional securing of areas, flood tolerated land uses – information for construction, restoration of building areas,...)
  - instruments to make people aware of the necessity of flood protection and flood prevention
- Model landscape ecology: for planning retention areas
- Hydraulic and mathematical models: for planning retention areas and for part III in order to decide which measures are appropriate on which site at which time
- Use of innovative psychological aspects to increase acceptance of flood protection / prevention measures

The Cologne Flood Protection Plan is of overriding importance for planning in the city. It includes the principles, objectives and flood controls as well as the necessary resources for all fields of action combined. It presents valuable arguments for preventive flood protection and measures of regional policy and conservation. The flood controls will be checked for practicability by competent specialised authorities, and then constructed with conventional planning and approval procedures. The unanimous resolution by all parties in the municipal council resulted in a new, improved awareness for all concerned.

3. Objectives

The main aims are the improvement of flood management as well as prevention and protection and what is inevitably connected with reduction in / restriction of damage potential, mainly by stopping development in endangered areas and the creation of retention areas. For that purpose flood maps (with information about flood lines, water levels, water depth etc.) had to be created. These maps can be used as a basis for land use or development planning. Making people more aware

of flood risks and their prevention is very important in this connection. For that purpose the Cologne Flood Protection Central Office developed and carried out a lot of innovative ideas, see point 2/II.
The Rhine is a border-crossing river so it is necessary to contact the neighbouring states in order to implement the planned long-term flood controls usefully. In this context it is an objective of the Cologne Flood Protection Central Office to cooperate with the other national and international communities or institutions, for example with the DKKV, IKSR (International Commission for Protecting the Rhine river), HWNG Rhein (Rhine Flood Misery Community). There are frequent meetings, where exchanges of experiences, specialised discussions, work on common projects etc. are discussed.
Environmental improvement is connected with the main objectives of flood prevention and protection, for example by the creation of retention areas (examples in Cologne: dyke removal in Porz–Langel and the retention area Worringer Bruch as well as the creation of a model bank area in Flittard). These flood prevention measures also have positive consequences on tourism and accessibility (education/exhibitions/adventure paths, walking/hiking/ cycle paths/trails; green oases in the urbanized area of Cologne).

4. Results obtained

These measures were supposed to be implemented within 10 years (until 2006). With the exception of structural flood protection, most of them have been realized, as for example the very important creation of flood maps. The structural measures will take a long time to complete. Because of the modification of plans, flood areas with a capacity of 1,3 Mio. m^3 could be restored and flood-endangered areas could be protected against divergent land use claims, for example retention areas in Worringen and Porz-Langel or Westhovener Aue.
Already by 1995 successful results were obtained in aspects of individual flood protection/prevention (halving of damages).
Further results are the general acceptance of flood protection and prevention by the Cologne citizens because of the very good public relations of the Cologne Flood protection central office.

5. Comments

The Cologne Flood Protection Plan is a very successful example for handling flood prevention in a strongly urbanized area. The strengths of the conception are the competent and wide-ranging analyses in connection with exemplary public relations. On the basis of analyses of the centenary floods in 1993 and 1995 a lot of flood protection and prevention controls were developed, but sometimes they were difficult to implement, particularly structural protection, because of misunderstandings and unacceptance on the part of politicians, the administration and/or inhabitants. Mostly the arguments against the flood protection and

prevention measures are «There is not enough money», «The water will never reach our house!» or «We want flood protection! – but not in OUR garden!».
Besides it is obvious that with increasing intervals between floods, cooperation between flood protection and town planning decreases. In order to resolve this problem the Cologne Flood Protection Central Office implemented some very innovative ideas. For example: the publication of information on flood risks and individual flood protection and prevention, the preparation of a flood tour in the city on foot or by bike; making a flood film, pamphlets and leaflets, a guided tour through a flood exhibition, the EXPO 2000 project: the longest level lath of the world or the creation of a model bank area/model low land to demonstrate a possible solution on the basis of a practical example, and much more. These measures helped to make people more aware of themes like flood protection and flood prevention.
It is not possible to protect Cologne without structural measures because of the historic growth of the city. The administration decided to use ecologically-friendly mobile flood protection systems to resolve this problem, for example the Aqua Barrier. These elements are constructed when the water rises and when the water level sinks they could be dismantled. So the "City-view" as well as the river area are only affected during floods. The problem is that this method is very expensive and requires a lot of manpower. Besides it is not applicable everywhere.
To summarise: the Cologne way of handling flood prevention and protection is one of the best examples in Germany.

6. Synthesis sheet

Case	High	Medium	Low	Absent
Ferry services, historic boats	*			
Cafés, restaurants				*
Harbours and marinas			*	
Parks and promenades	*			
Cycle routes	*			
Sports and other leisure activities			*	
Artificial lighting systems				*
Theatres, museums, science centres	*			
Water quality measures			*	
Water management options, especially flood prevention/flood protection	*			
Housing and offices			*	
Reduced motorised traffic, parking				*
Integrated masterplan	*			
Art and sculptures	*			
Temporary markets and festivals	*			
Facilities for children, the elderly and disabled	*			

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Summaries

Il piano per la protezione dalle alluvioni ha un'importanza rilevante nella pianificazione urbanistica della città di Colonia. Esso prevede non solo le regole, gli obiettivi e le misure necessarie per la protezione delle alluvioni ma anche tutte le risorse necessarie per tutti i campi di intervento. Per di più contiene misure per la prevenzione delle alluvioni a livello regionale. In questo contesto sono state realizzati numerosi progetti innovativi, per esempio, la mappa delle alluvioni con i suoi confini e la creazione di un'area di laminazione in un'area compresa dentro i confini comunali. Poiché l'espansione urbana della città non consente di attivare misure di salvaguardia senza danneggiare parte di essa, l'Amministrazione comunale ha deciso di usare un sistema di protezione mobile per risolvere il problema. Questi elementi di contenimento delle acque possono essere montate in breve tempo e smantellate dopo le piene. Così non viene deturpata la struttura storica della città, poiché queste chiuse sono presente nel breve periodo delle piene. Pertanto il sistema adottata da Colonia per la prevenzione e protezione delle alluvione viene considerato uno dei migliori esempi adottati in Germania.

Das Hochwasserschutzkonzept der Stadt Köln ist von übergeordneter Bedeutung für die Stadtplanung und -entwicklung. Es beinhaltet die Grundsätze, Ziele und Maßnahmen sowie die erforderlichen Ressourcen für alle Handlungsfelder des Hochwasserschutzes. Darüber hinaus enthält es wertvolle Argumente für den vorbeugenden Hochwasserschutz und für Maßnahmen der Regionalpolitik. Die Hauptziele sind die Verbesserung der Hochwasserabwehr als auch der Hochwasservorsorge und des Hochwasserschutzes, was zwangsläufig mit einer Verminderung und Begrenzung des Schadenspotentials verbunden ist, vor allem durch die Unterlassung weiterer städtebaulicher Entwicklung in den gefährdeten Gebieten und die Schaffung von Retentionsraum. Für diesen Zweck mussten Hochwasserkarten mit Anagabe der Überschwemmungsgebiete, der Wasserstände und –tiefen usw. generiert werden. Aufgrund des historischen Wachstums der Stadt ist es nicht möglich, Köln ohne strukturell-technische Maßnahmen zu schützen. Um dieses Problem zu lösen, entschied sich die Stadtverwaltung für die Verwendung von umweltfreundlichen mobilen Hochwasserschutzsystemen. Diese Elemente können in kurzer Zeit errichtet und nach dem Hochwasser rasch wieder abgebaut werden. Somit sind das Stadtbild wie auch die Flussuferbereiche nur zu Überschwemmungszeiten beeinträchtigt. Die Lösungen, die die Stadt Köln bei der Realisierung der Hochwasservorsorge und des Hochwasserschutzes gefunden hat, können als eines der besten und routiniertesten Beispiele in Deutschland gelten.

El Plan para la Protección contra Inundaciones de Colonia es de primordial importancia para la planificación de la ciudad y el desarrollo urbano. Incluye los principios, objetivos y medidas de protección contra las inundaciones, así como los recursos necesarios para todos los campos de acción. Además presenta valiosos argumentos para la protección preventiva contra inundaciones y medidas de política y conservación regional. Los principales objetivos son la mejora de la gestión de inundaciones y la prevención y protección, lo que está inevitablemente vinculado a la reducción y la restricción de daños potenciales, principalmente mediante la no urbanización de zonas en peligro y la creación de zonas de retención. Para conseguir dichos propósitos hubo que crear mapas de inundaciones (con información sobre las líneas de inundación, niveles del agua, profundidad del agua, etc.). No es posible proteger la ciudad de Colonia sin unas medidas estructurales debido al crecimiento histórico de la ciudad. La administración decidió utilizar sistemas móviles de protección contra inundaciones, ecológicamente fáciles de usar para resolver este problema. Estos elementos se construyen cuando sube el nivel del agua y se pueden desmontar cuando baja. De esta forma, la visión de la ciudad y de la zona fluvial se ve solamente afectada durante las inundaciones. La solución de Colonia para la prevención y protección contra las inundaciones se ha convertido en uno de los mejores ejemplos de Alemania.

Le Plan de Protection contre les Inondations de Cologne est d'une importance primordiale pour l'urbanisme et l'aménagement de la ville. Il comporte des principes, des objectifs et des mesures de protection contre les inondations ainsi que les ressources nécessaires dans tous les domaines d'action. D'autre part, il présente des arguments de poids pour une protection préventive et pour des mesures de politique régionale et de conservation.
Les principaux objectifs visent une amélioration des inondations avec de la prévention et de la protection et tout ce qui est lié à la réduction et à la restriction du potentiel des dommages, essentiellement en arrêtant toute construction dans les quartiers en danger et la création de zones de rétention. Pour cela, il a fallu créer des cartes des inondations, avec les données sur les axes des inondations, les niveaux de l'eau, la profondeur de l'eau, etc. A cause de la croissance historique de la ville il est impossible de protéger Cologne sans mesures structurantes. Pour résoudre ce problème, la municipalité a décidé de mettre en oeuvre des systèmes mobiles de protection contre les inondations respectueux de l'environnement qui sont mis en place lors de la montée des eaux et qui peuvent être démontés lors de la décrue. Ainsi les perspectives de la ville et des quartiers près du fleuve ne sont affectées que pendant les inondations. La solution de Cologne pour assurer la prévention et la protection contre les inondations s'est avérée être l'un des meilleurs exemples en Allemagne.

Kölni linna planeerimisel ja arendamisel on esmase tähtsusega dokumendiks Kölni üleujutuskaitse plaan. See sisaldab üleujutuskaitse põhimõtteid, eesmärke ja meetmeid, samuti loetleb kõigiks tegevusvaldkondadeks vajalikke ressursse. Lisaks esitab see väärtuslikke argumente ennetava üleujutuskaitse ja regionaalse tasandi meetmete kohta. Selles kontekstis on ellu viidud terve hulk uuenduslikke projekte, näiteks üleujutuskaartide koostamine või veetõkete rajamine munitsipaalalale. Linna ajaloolise kujunemise tõttu ei ole võimalik kaitsta kõiki ohustatud alasid ilma tehniliste meetmeteta. Linnavalitsus otsustas kasutada selle probleemi lahendamiseks mobiilseid üleujutuskaitse süsteeme, mille elemente on võimalik kiiresti üles panna ja pärast üleujutust jälle maha võtta. Seega mõjutatakse linnavaadet ja jõekalda piirkonda ainult üleujutuste ajal.
Kokkuvõttes: Kölnis kasutatud moodus üleujutuste ennetamiseks ja nende eest kaitsmiseks on väidetavasti üks parimaid Saksamaal ning on ennast tõestanud, seda eriti avalike suhete osas.

Synthesis sheet

Case	Bilbao	Bremen	Budapest	Köln	Lisboa	Lyon Confluence	Lyon Parc Miribel	Padova	Paris	Porto	Praha	Regensburg	Roma	Strasbourg	Torino	Wien
Ferry services, historic boats	M	M	M	H	A	A	A	H	H	X	L	A	M	L	M	H
Cafés, restaurants	M	M	M	A	M	H	H	A	H	X	M	L	L	M	L	H
Harbours and marinas	L	M	L	M	H	M	A	L	H	X	M	M	H	A	A	H
Parks and promenades	H	L	H	H	H	H	H	H	H	X	M	M	H	H	H	H
Cycle routes	M	M	M	H	M	H	H	H	H	X	M	A	H	H	H	H
Sports activities	L	L	M	M	H	H	H	L	H	X	A	A	L	H	M	M
Artificial lighting systems	X	X	H	A	M	M	L	L	H	X	A	A	L	H	L	M
Theatres, museums, science centres	H	L	H	H	H	H	L	A	X	X	M	M	L	A	L	M
Water quality measures	H	L	M	M	H	M	M	L	H	X	M	M	M	M	H	H
Water management options, especially flood prevention/flood protection	X	L	X	H	H	H	H	M	H	X	H	H	M	M	M	H
Housing and offices	M	M	L	L	A	H	A	M	H	X	M	H	L	A	M	L
Reduced motorised traffic, parking	M	M	L	A	M	M	M	L	H	X	A	X	L	M	M	H
Integrated masterplan	H	H	X	H	M	A	L	M	H	X	H	H	M	A	H	M
Art and sculptures	H	M	X	M	A	H	L	A	H	X	M	H	M	H	A	M
Temporary markets and festivals	L	M	H	M	L	H	H	L	H	X	A	L	L	H	A	H
Facilities for children, the elderly and disabled	M	L	M	M	H	H	H	L	L	X	A	A	L	H	M	M

Legenda: H = High, M=Medium, L=Low, A=Absent, X=Unknown data

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RiverLinks project InterregIIICsud

The RiverLinks project is the initiative of several European cities that have welcomed the request from the city of Florence to the InterregIIICsud Community Initiative Program for financial assistance to tackle jointly the problem of the relationship between metropolitan areas and their rivers.

European cities are searching for suitable ways to enliven internal development, limiting land use and renewing inner urban areas that no longer correspond to the current priorities of international competition and sustainable, effective economic development that stimulates entrepreneurs, creates employment, improves the urban profile and attracts substantial investments.

For historic reasons a large majority of European metropolitan areas are built beside rivers, which are sources of both joy and sorrow. Urban riverfronts have an enormous potential that is not always adequately understood and developed, and is often conditioned by the emotions caused by flood risk or experienced tragedy.

Upstream from RiverLinks, environmental and hydraulic measures have to be taken for reasons of safety and water quality. These give an opportunity for cooperation in conceptual layout and operative economics during urban planning and designing.

Several European cities are now starting to improve and develop their riverfronts providing various opportunities for the European Commission to fund projects as proof of the importance attributed by the European Government. Other than Interreg, which has already financed other similar projects in Europe, the Urban Community Initiative launched the pilot projects in London and Porto in the late eighties.

To begin with RiverLinks defined critical areas in cities for the development of pilot projects, demonstrating the effectiveness of renewed, adequate planning, and where to create four pilot infrastructures as the jewel in the crown of the project as a concrete contribution by RiverLinks.

To support these scientific and technical activities, the partnership has undertaken research at European level to compile an inventory of twenty first-rate cases of European cities that successfully manage their riverfronts, improving the entire urban structure and encouraging sustainable, dynamic development. This research will be published by RiverLinks and distributed in Europe during the spring of 2005.

Currently, the partnership is developing pilot planning and creating the sample infrastructures that will be completed in 2006 and presented during the final conference planned to take place in Florence in May 2006. The state of progress of the project is regularly documented on the website www.riverlinks.org.

January 2005
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Printed in Italy in may 2005
by Industrie Grafiche Pacini Editore - Ospedaletto (Pisa)
on behalf of Edifir-Edizioni Firenze