Forests for Shrinking Cities? The Project "Industrial Forests of the Ruhr"

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Introduction

The central theme in urban planning in Germany currently is how to address the consequences of population decline. These consequences are already being felt in many places, in other areas they are fearfully expected. Shrinking cities and perforated cities are terms to describe the break up of urban structure in which new open spaces arise through the demolition of residential buildings and infrastructure facilities. Urban planning works to provide direction for an orderly retreat. It has long been unclear whether this has been successful (e.g. Arbeitskreis Stadterneuerung 2002).

None of this is completely new. It was already clear in the 1980s that these demographic developments would arise. Also, the old industrial regions of Europe – the Ruhr, for example – have several decades of experience with the shrinking process (Wachten 1996).

This marks a serious turning point for architects and urban planners, politicians and citizens who are accustomed to combining progress with growth and now must consider demolition and deconstruction. These aspects of decline have triggered helplessness and depression in recent years. Landscape architecture has been brought more sharply into focus in the search for new approaches to solutions. For one, this is for purely pragmatic reasons. When a building is torn down and a new built use has been ruled out over the long term, a new "open space" is created to be designed, to be developed, to be dealt with. Also, within landscape architecture, work with vegetation is the central element. Inherent in this is the integration of growth and decline. A dynamic and flexible work and design philosophy is far more necessary in landscape architecture than in architecture. This gives rise to the hopeful expectation that landscape architecture can also help in the development of process-oriented solutions which fea-

Kowarik I, Körner S (eds) Wild Urban Woodlands.

ture the necessary integration of growth and decline of urban structure (Dettmar and Weilacher 2003).

The rediscovery of open space, or of landscape architecture as the case may be, is thus explained. Communities, developers, and politicians are demanding, above all, new open spaces in the city – cost-effective, ecological, urban and attractive open spaces. This cannot be achieved with the traditional approaches and traditional building blocks of publicly financed green space. New strategies for the development of urban open space are being sought and tested in many places (see Rössler 2003). In this chapter, the experiment of the "Industriewald Ruhrgebiet" (Industrial Forests of the Ruhr) will be used to illustrate the solutions that were found in the largest former industrial, urban agglomeration in Europe.

The need for an experiment

In the mid-1980s, due to the increasing decline in mining and heavy industry, the Ruhr had reached a point at which ecological and cultural problems were becoming known, in addition to the area's substantial economic and social problems. The many conventional economic development policies that had been attempted had not shown any of the hoped-for success. The Ruhr featured the highest unemployment rates in North Rhine- Westphalia and in the former West Germany at over 15%. It was becoming increasingly clear that the negative image of the region, burdened by its industrial past, was becoming a decisive disadvantage. The image was that of faceless cities, insufficient visual landscape qualities, the legacies of industry in the form of ruins, abandoned areas, etc. During the years 1989 to 1999, the state government attempted, with the International Building Exhibition (IBA) Emscher Park, to provide a catalyst for a fundamental renewal of the areas of the Ruhr that had most been affected by industrialization—the central zone along the Emscher river. At the fore were those aspects that related to the creation of an attractive post-industrial cultural landscape. One aspect was the development of the Emscher Landscape Park, a new regional park with regional greenways, whose main features had already been considered in the 1920s (Schwarze-Rodrian 1999).

With the actual condition of the urban-industrial landscape as the starting point, remaining open spaces were to be connected as much as possible and some parts were to be further designed. The numerous abandoned industrial areas played a decisive strategic role in this. Due to the closure of coal mines, steel works, and numerous infrastructure facilities, e.g. factory railways, more than 1,000 ha of land lay abandoned at the end of the

1980s. A new built or otherwise profitable use for these areas appeared to be ruled out. The transformation into open space and the integration into the Emscher Landscape Park was a logical result that was made possible through the solid commitment of public funds within the framework of the IBA Emscher Park. In this way, a number of large new parklands of different types were developed during this period (Dettmar and Ganser 1999).

In principle, the creation of green spaces from former industrial land was not entirely new; at the end of the 1960s, for example, the Municipal Union of the Ruhr had already recultivated and revegetated a number of coal slag heaps on behalf of the communities and made them available as nearby recreational areas for the public. What was new was the consistent incorporation within the Emscher Landschaftspark (Emscher Landscape Park) and an intense engagement with the question of what design form was suitable for the post-industrial era. Numerous planning competitions and workshops were held. Significant projects included the Landschaftspark Duisburg Nord (Duisberg North Landscape Park), the Nordsternpark (North Star Park) in Gelsenkirchen or the Seepark (Lake Park) in Lünen (Schmid 1999).

It was also clear to the participants, however, that it would not be possible to actively redesign the greater part of the abandoned areas solely with the frugal financial conditions of the IBA phase. Furthermore, it was obvious that the future would bring large financial problems for almost all of the communities, above all the difficulties which come with the long-term maintenance of green space.

In addition, a number of those responsible within IBA Emscher Park, Ltd. were somewhat dissatisfied with the results of the new park planning. Despite all efforts, too few truly regionally specific designs had been developed. The system of planning competitions, landscape architectural design, implementation plans, and recreation concepts allowed too much of the industrial-historic, aesthetic and ecological substance of the abandoned areas to be lost. In the best cases, an attractive new park was envisioned that was no longer site-specific, but could have been built anywhere. Too many people in the system were responsible only for aspects of the whole, no one was there from the beginning to the end. At the end of the planning and construction process, the community open-space department would remain and have to find a solution for the upkeep with scarce financial resources. This alone would lead inevitably to a loss of quality.

The other alternative, to leave the spaces to themselves and do absolutely nothing, also offered no sensible prospect for a solution. On many sites that had been abandoned for longer periods of time, one could observe how the ecological and aesthetic qualities had clearly been affected, for example, by trash disposal or illegal motorbike use. In addition, a few

owners used the sites for the temporary storage of soil und other substances or rented them out for a small fee to construction companies, moving firms, etc. Furthermore, entrance to the sites remained illegal and was only possible and of interest for a part of the public. The fundamental reasons for these issues were the absence of social controls and the potential safety risks of the ruins, mine shafts and brownfields.

The basic approach of the project

Under conditions such as these, a new approach was needed. Additionally, it was already clear that demographic changes would sooner or later lead to the availability of a substantial number of previously built areas throughout Germany. For this reason as well, model strategies needed to be developed. The most important goals associated with a new approach can be classified as follows:

- Consider the increasingly difficult financial situation of the community.
  - Cost-effectively transform areas in the city that no longer have an economic use into usable green spaces of different types that require very little upkeep.
- Consider alternative methods to avoid the blandness and loss of quality that is involved in the "normal" planning process when transforming an abandoned area into a park.
  - Offer solutions, usually absent in normal conversion approaches, that consider the specific aesthetics, the species and biotope conservation potential and the dynamic development potential of nature in abandoned areas.
  - Protect the authenticity of the abandoned areas during redesign; preserve the natural potential that is always an expression of the industrial history of a site.
  - Understand industrial nature as a counterpart of industrial culture.
- Make the areas available to the public.
  - Find intelligent solutions to the problem of liability which forces the owners of properties, especially communities, to eliminate even the slightest risk and thereby brings about a homogenization.
  - Set up social controls.
  - Make contact with nature possible in the city by creating or conserving natural areas that are appropriately accessible.
- Augment forests in forest-poor urban areas such as the Ruhr.

The approach, therefore, was not to elaborately redesign the abandoned areas based on conventional planning, but rather, in principle, to allow the natural development, succession to have free rein. The starting point was the realization that all stages of succession up to and including the mature forest feature ecologically interesting and aesthetically appealing elements (Dettmar 1999, 2004).

What was being sought was something best described as "nurtured development". The responsibility for a site would no longer be divided between planning and realization phases, but rather would be anchored in one person. This person would be present as much as possible at the site and thereby secure a certain social control.

The implementation

The idea of nurtured development, of maintenance and cultivation, quickly brought the historic image of the forester into the minds of the parties involved in the IBA Emscher Park. The employment of foresters in the abandoned areas is a logical step for the process of succession towards the forest, a process which happens relatively quickly on most sites. Federal and state forest regulations allow for even early stages of growth without a dominant woody layer to be defined as forest development areas. The formal transformation of a former industrial site into a forest at the level of land use planning will secure this status. The forest classification has significant advantages for the owners, at least when the change in the property valuation does not present economic problems. As long as the site is identified as a normal production forest and not explicitly as a recreation forest, there are lower standards for liability than would be the case for a park. This is, at least, the estimation of lawyers of the Forestry Administration in North Rhine-Westphalia (NRW).

In 1996, the experiment was begun under the title "Restflächeprojekt" (Remnant Land Project) in collaboration with the State Forestry Administration NWR. Work was initially begun on three core sites in the central Ruhr on old abandoned industrial sites, areas for which, for the most part, no new built use was expected. The Grundstückfonds NRW (a public fund of NRW for purchasing property) acquired the sites for the State of North Rhine-Westphalia with the objective of developing new commercial space in certain areas; the remainder of the land was to be transformed into green space.

The remainder included parts of the former Rheinelbe coal mine in Gelsenkirchen (ca. 40 ha that had been decommissioned in the 1920s; parts

were to be developed as the Rheinelbe Industrial Park/Science Park), parts of the former Alma coal mine in Gelsenkirchen (ca. 30 ha, decommissioned in the 1960s, with significant areas of brownfields), and parts of the former Zollverein Shaft XII coal mine and Zollverein coking plant in Essen (ca. 40 ha, decommissioned in the 1980s, of significant industrial historic preservation value). An extensive description of the sites is available in Rebele and Dettmar (1996).

The core sites were integrated into the project on the basis of a *Beförsterungsvertrag* (forest maintenance contract) with the Forestry Office of Recklinghausen according to the state forestry regulations of North Rhine-Westphalia. The *Beförsterungsvertrag* provides for private forests to be overseen by state forestry offices. In this way, taxes of only a few euros per hectare on the land are due.

In total, three employees of the State Forestry Office NRW were made available for the project. On the site of the Rheinelbe in Gelsenkirchen, a forestry station was created through renovation of an old switch house of the coal mine.

During the test phase from 1996 to 1999, a total of approximately 500,000 Euros were available for the project as start-up money from the EU in combination with funds from the Emscher Lippe Ecology Program of the State of North Rhine-Westphalia; about 70% were used for the renovation of the forestry station. The remaining money was available for provisions for the site. The labor costs of the foresters are paid by the forestry administration.

At the same time, a expert advisory board was assembled, with representatives of almost all of the institutions that are relevant to the project (ministries, communities, property owners) as well as scientists. The board determines the basic concepts for the development of the project and the integrated areas. Decisions regarding the use of funds fall to this group as well. Furthermore, the board is intended to assist the foresters with problems that arise with the institutions or with the forestry administration.

For the core areas, development concepts were worked out by the author that were then adopted by the advisory board. These served as guidelines for the maintenance of the areas for the foresters during the first years of the project. In this way, the employees of the forest administration could be informed and made aware through their work with the succession forests and with the abandoned areas and their particular ecology.

In addition, ideas were developed about necessary measures for development and providing access to the sites (path design), safeguarding against dangers (brownfields, accident-prone locations), species and biotope conservation (promotion of individual species), and special public

uses (keeping some sites open). Just as important was defining the areas in which no interventions would be made.

After a period of learning, the foresters continued to develop their own ideas for managing the sites, coming closer to the ideal of nurtured development. A prerequisite for this, however, is a stable workforce.

The offer of regular guided tours through the "industrial nature" became a very important part of the work of the foresters. The demand has steadily increased. To this end, the forest station has been outfitted with educational, seminar, and class rooms for school children, preschoolers and other groups.

Table 1. Overview of the number of participants on guided tours through the Industrial Forest Project from 1998–2003 (Source: Statement of the Rheinelbe Forest Station in June 2004)

Year	Number
1998	1,800
1999	3,490
2000	2,800
2001	3,100
2002	3,300
2003	3,500

Within the framework of the IBA Emscher Park, sculptural works of artists were integrated into the two core areas of the Rheinelbe in Gelsenkirchen (nine sculptural works of Herman Prigann) and the Zollverein in Essen (five sculptures of Ulrich Rückriem) (see Dettmar 1999; Prigann 2004). In particular, Herman Prigann with his work in Rheinelbe, attempted an artistic interpretation of the transformation of the abandoned areas through natural succession and of the appropriation of the sites by humans. At the same time, the artistic installations help to change the visitor's perception of the site (for a detailed description, see Strelow 2004). Those involved in the project anticipated that the art would bring value to the abandoned areas and therefore lead to a greater public acceptance.

Certain areas were intentionally incorporated into the project for limited time periods. This was true, for example, for part of the site of the Rheinelbe coal mine in Gelsenkirchen. There, as planned from the beginning, a part of the Rheinelbe Industrial Park/Science Park was to be developed. This was intended to show that intermittent management of the abandoned areas was also possible through the project. This is of interest

for owners who still anticipate built development on their property in the medium to long term.

It was expected from the start that private land would be integrated into the project. The largest part of the abandoned industrial areas in the Ruhr remain in private hands, especially large firms like Thyssen-Krupp or Deutsche Steinkohle. It would not be possible to acquire all of these sites through public funding. When no other interested parties are to be found, the project can be an interesting partner for firms. In the meantime, a number of appropriate sites have been incorporated; in addition to the *Beförstungsvertrag*, conventional lease agreements have also been used.

Table 2. Overview of the sites of the Industrial Forest Project of the Ruhr. (Source: Statement of the Industrial Forest of the Ruhr, Recklinghausen Forest Office, June 2004)

Site	Area (ha)	Location
Rheinelbe coal mine	42	Gelsenkirchen
Emscher-Lippe 3/4 coal mine	34	Datteln
Alma coal mine	26	Gelsenkirchen
Waltrop coal mine	26	Waltrop
Zollverein coking plant	21	Essen
Graf Bismarck coal mine	20	Gelsenkirchen
Zollverein Shafts I, II, VIII, XII coal mine	20	Essen
Hansa coking plant	20	Dortmund
Chemische Schalke chemical factory	13	Gelsenkirchen
Victor 3/4 coal mine	12	Castrop Rauxel
Constantin 10 coal mine	8	Bochum
König Ludwig 1/2 coal mine	2	Recklinghausen
Total Area	244	

Further areas totaling a few hundred hectares are currently in the process of being incorporated.

The “Restflächenprojekt” successfully closed out its five-year test phase in 2000 and was established as a permanent project of the State Forestry Administration NRW in 2001. Thereafter the project was operated and further developed by the Forestry Administration through the Recklinghausen Forest Office and through the Rheinelbe Forest Station in Gelsenkirchen.

This has all worked out well when measured by the number of regular visitors and the number of tours. Through public works, the Forestry Administration was able to build an important foundation directly in the cities of Gelsenkirchen and Essen. The attractiveness of the sites to children and

youth is especially important; they find a much greater degree of freedom there than in most urban open spaces. On these sites, truly direct contact with nature takes place (see also Keil 2000).

Applicability

What can be applied in other cities or regions? Clearly such a fortunate case as the IBA Emscher Park with its start-up financing to serve as a catalyst occurs only rarely. Of course, the foresters entail labor costs—nevertheless, the development and maintenance of these sites is many times more cost-effective than conventional green spaces (see Dettmar 1997).

It is conceivable that a corresponding plan for care/custody could also be constructed from labor market projects, citizens' or nature-conservation organizations, residents, or other kinds of volunteers. What is needed is a coordinating and supervisory site, but why shouldn't this be located in the forestry or open-space department? Enthusiastic employees are, however, a prerequisite for this idea. A certain level of knowledge about succession is also necessary, in order to learn that one can withstand the increasing wilderness, that the urgent need to intervene can be held in check. The essential features of structural development and the necessary safeguarding against danger must also be carefully determined. The issues of liability certainly can not be fundamentally neglected, but in the forest there is more leeway.

There are probably more lessons to be found in this approach. Perhaps the most valuable contributions to the future of landscape architecture are to be found in the ideas, suggestions, and solutions for the function and design of residual open spaces. How does one develop a sustainable and attractive urban landscape from the abandoned landscapes of endless suburbanized developments? Can one succeed in creating a sustainable and attractive urban structure within the perforated urban structure using the abandoned lands that arise when cities shrink?

Clearly the demands of the suburban growth zones and of shrinking cities are very different at first glance. In one case, there is great economic pressure and need for space, in the other there is shrinking and retreat. From a structural perspective, however, under both conditions an urban space consisting of a patchwork of built and open spaces arises.

When urbanization processes are viewed fundamentally, growth and shrinking belong together. The further development of urban industrial society has produced a kind of “total industrial landscape”, as Sieferle (1997)

has described it. This landscape is characterized by a constantly increasing flow of information and a universal disposability of materials and is based on an increasing use of energy. Consequently, an apparently individual and fleeting pattern of differentiation appears, a unity of variety and monotony based on the same universally available fashions, building styles, architecture, and garden designs with the corresponding merchandise, building materials, and garden center products. In contrast to the old cultural landscapes, no new permanent, truly recognizable style emerges. This would require far more development time and regional isolation. The one characteristic that remains is constant change. This mobilized stylelessness is the one overarching feature of our urbanized landscape, the only constant is the permanence of change (Sieferle 1997). This applies as a functional principle to the entire space, independent of suburban growth or urban shrinking. It also generally applies independently of the degree of development, and independently of the historic categories of urban and rural.

We attempt to guide processes and to achieve a design through planning that will eventually create an economically functional, attractive, liveable, functioning urban or landscape structure. With regard to the intercity structures of suburban spaces, most experts believe that, thus far, we have not succeeded. The hope of architects and urban planners is centered on the potential to structure, to organize, and to give new identity to the intercity areas through open space (Bächthold 1995; Sieverts 1997). Here as well, open space experiences an urban "flight of fancy" (Lohrberg 2002).

The different approaches to regional parks in Germany (the Emscher Landscape Park in the Ruhr, the Rhein-Main Regional Park, the Stuttgart Green Neighborhood, the Filder Raum Regional Park, etc.) operate according to this strategy. With this, planning for regional greenways and systems for open space connections are provided for. In doing so, planning follows the most common goals of safety, care, order and design.

If one follows the analysis of Sieferle, the attempt to create order out of chaos is understandable, but doomed to failure from the start. Permanent change ultimately excludes stable patterns of order. The recourse to typical landscape elements of the pre-industrial era (the Rhein-Main Regional Park) or the aesthetic staging of the likewise bygone industrial landscape (the Emscher Landscape Park) are only integrated elements in a mobilized landscape, in which these museum-like or symbolic islands only emphasize the totally constructed character of the landscape.

Principles of organization ultimately originate from fears or from the need for harmony; returning to what is known is understandable. What happens when this fails? Because we still have no clear vision of the structure, function, design and qualities of the mobilized, urbanized landscape of the Information Age, much energy is currently being expended to study

and to understand the existing conditions and the mechanisms by which the existing conditions arose (Lootsma 2002). We must examine to what extent our perceptions, shaped as they are by historic images and representations, allow us to perceive potential qualities or organizational patterns in new structures (Dettmar and Weilacher 2003).

During shrinking processes as well, one attempts, through planning, to retreat in an orderly fashion, to avoid allowing merely accidental factors to determine the makeup of the new urban structure. Where and at what scale demolition will occur, where new green spaces will be arise and how these can be sensibly joined together is a process that must be guided (Giseke 2002).

Whether it is the shrinking of the urban structure from the era of industrial expansion (e.g., in Leipzig's Osten) or large developments at the edges of cities (e.g., in Berlin's Marzahn) is unimportant—the newly created open spaces must give a new organizational pattern to the whole. Forest edges and walls of trees form the new edges of spaces when buildings are broken apart (Giseke 2002). Behind these changes is fear, fear of the disintegration of a beloved urban structure, of the end of the traditional European city.

Wilderness in abandoned areas will only be accepted as long as it develops within a specified framework, as long as it fits in with the planned pattern of new open spaces. "In many places, open space in disintegrating cities is given the task, not of bringing wilderness to the city, but rather of properly maintaining the continuum of urban development and public social space. In other words: urban planning through landscape" (Becker and Giseke 2004).

What role will abandoned areas, increasing wilderness, and succession forests have in the future?

Abandoned areas can provide a building block for urban open spaces. They certainly aren't without cost, but as the Industrial Forest Project shows, they are much more cost-effective than other public green spaces. The option of potential re-use or new construction, should the social and economic conditions change, makes abandoned areas attractive as well. Under certain circumstances they offer great ecological, aesthetic and social qualities. As islands of transformation determined by nature, they can offer a different kind of permanent change within the constant transformation of the total urban landscape, while always presenting site-specific character. This is more true the more time they have to develop. Particularly for the development of children and youth, a touchable, usable, uncontrolled, wild experience with nature is important (Gebhard 1998).

Abandoned areas can also serve as land reserve for the creation of energy, water and nutrient recycling systems in urban landscapes. One must

only bring to mind the example of semi-natural rainwater management in cities (Londong and Nothnagel 1999). From a sustainability perspective, creating decentralized wastewater systems with plant purification systems, biomass production, and biogas usage is sensible within urban landscapes on suitable open spaces (see Ripl and Hildmann 1997). A co-existence of traditional green spaces, succession forests, drainage infiltration areas and plant water-treatment systems is conceivable. These are likely important building blocks of the urbanized landscape in the Information Age.

Cities were historically seen as places free from the dangers and risks of nature. The cultural break between the city and the landscape began with our estrangement from direct food production and from the discovery of the landscape by "emancipated" humans. Landscape became a synonym for nature and increasingly took on aesthetic symbolism. When "nature" found an entry into the city it was in the civilized aesthetic, staged form of gardens and parks, though with very different visions of nature during different cultural eras. In each case, a "wild" spontaneous "nature" suited to the urban conditions of the city was not a symbolically ideal nature, but rather a profane expression of urban reality. As well, such nature was an expression of a city not functioning perfectly.

At least in Germany, wild abandoned areas that exceed a certain scale engender strong psychological fear. This is true for cities, but also generally for cultural landscapes shaped by agriculture. In cities, this clearly arises from a cultural historical basis, from the consequences of wars from the Thirty Years' War with its deserted towns to the destruction of World War II.

This must all be understood if one is to see abandoned areas as integrated building blocks of urbanized landscapes and not as an unavoidable evil. With the end of the Industrial Age, we have arrived at a point at which we must question and examine the function, the perception and the design of open space in the completely urbanized society and landscape. A central issue in this is the question of the human understanding of nature and our relationship with nature in the Information Age.

A core element of a new relationship with nature seems to be a stronger focus on the development principles of nature and less on a particular stage of development. In this sense, abandoned areas can be places of learning and experiencing a transformation guided by nature within a mobilized landscape.

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