

8.2 Management Development and Vegetation (MDV) Pilot Project for the Regional Park Maintenance Scheme Emscher Landscape Park 2010

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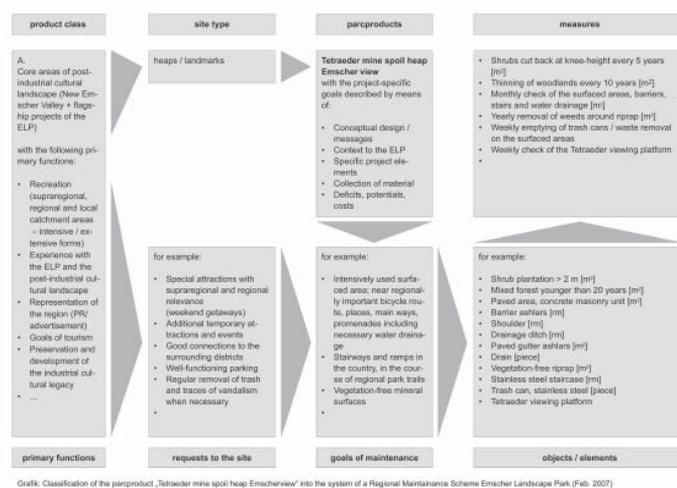
Goals

At the centre of the herein presented R&D project is the development and implementation of innovative strategies for a sustainable, regionally-tuned concept for open-space management and maintenance in the Ruhr district. The main area of focus for this undertaking is the Emscher Landscape Park (ELP), which represents the largest and most developed regional park in Europe with its 45,754 ha and almost 180 realised and approx. 250 planned projects (see Dettmar & Ganser 1999, Rohler 2003, ProjektRuhr 2005). Until now the coordinated management and maintenance of regional greenspace networks hasn't been the object of research nor has it played a role in other regional park schemes. In the long-term the research results are to be applied to other regional parks.

The examination of existing quality ob-

jectives and the development of new and comprehensive ones for the various open-space types in the Emscher Landscape Park is an essential prerequisite for a sustainable land-use management. On the one hand opportunities based on economic realities and the special interests of the property owner must be respected. On the other hand a plausible position backed by theory is necessary when faced with questions concerning the look of future cityscapes in the Ruhr district.

Furthermore the developed quality objectives will be combined with forward-looking questions that arise from the further development of urbanised regions to give important feedback. The chaotic growth (urban sprawl) (see Sieverts 1999), the demographically-based shrinkage and demands of sustainable development provide the framework for this discussion (see Körner 2005).



Foundation

Successful land recycling depends on a corresponding demand for real estate and land. In the light of the shrinking population of the Ruhr district a very limited demand will be contrasted by a surplus of (derelict) land in the foreseeable future (see Junkernheinrich & Micosatt (2005)). The Emscher Landscape Park was and still is the (regional) planning instrument that is to accompany the growth in open spaces, make use of the inherent chances for the region and simultaneously limit the inherent risks.

As such, three central fields of research arise from the development of the Emscher Landscape Park:

- Can a definition be found for differentiated quality objectives based on location, which is borne by all parties? Is the coordinated implementation of the corresponding measures possible in spite of the difficult financial situation?
- Which design-related tasks arise against the backdrop of constantly changing urbanised landscapes? How can suitable guidelines be developed and communicated and how can they be implemented with-

in the framework of maintenance and care for open spaces?

- What potentials are there concerning the implementation of sustainable open space management, use and maintenance with regard to the anticipated growth in open space?

The development of the Emscher Landscape Park 2010 Masterplan provided a first opportunity to critically discuss the importance of care and long-term maintenance as key factors concerning the future sustainability of the regional park (ProjektRuhr 2005). Although the open spaces of the regional park are currently being maintained, this is achieved by various proprietors each acting according to their own mission, ideas and resources. Until now, regional coordination and dialogue have been entirely lacking and there hasn't been any development of collective goals with regard to quality. As a result, the standard of maintenance is varied and in some cases entirely deficient. In certain areas, continued public funding for the development of new greenspaces even appears to be endangered as funding prerequisites are not met due to deficient or faulty care.

The applied for R&D project is conceived as a pilot project for a regional park

maintenance scheme, which is based on a prototypical investigation corridor of two of the seven regional greenspaces in the Emscher Landscape Park. Its purpose is to put the topic of sustainable development of the urbanised landscape at the centre of a regionally coordinated project and to provide the RVR with the management tools it will require in its future role as the supporting organisation for the Emscher Landscape Park. At the same time, standard approaches for high-quality, sustainable management of urbanised landscapes will be developed, and involved parties will be integrated into the regional park scheme in their areas of responsibility.

Parties

The R&D project is unthinkable without the central and regionally important proprietors in the Ruhr area. In detail, the project has the following partners:

- The Regional Association of the Ruhr (RVR)
- The sewage associations Emschergenossenschaft and Lippeverband (EG/LV)
- The cities of Bochum, Bottrop, Essen, Gelsenkirchen, Gladbeck Herten, Recklinghausen
- The Federal Waterways and Shipping Office (WSA)
- The Federal Highway Administration – North-Rhine Westphalia (NRW)
- The NRW State Development Society (LEG) as the trustee of the NRW's real-estate fund
- The Forest Administration NRW, Wald und Holz, represented by the Recklinghausen Forestry Office as the supporting organisation for the project "Industrial Forests Ruhr Region"
- The Montan Real Estate Company (MGG) a subsidiary of Ruhrkohle

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Work Status / Results

The research project is divided into two parts:

- The practical planning part with the goal of laying the foundation for a regional park maintenance scheme in the Emscher Landscape Park within the framework of a pilot project
- The scientific-theoretical part that examines the possibilities for improvement in sustainability for urbanised landscapes through a new maintenance and development scheme for greenspaces, with the Ruhr area acting as an example

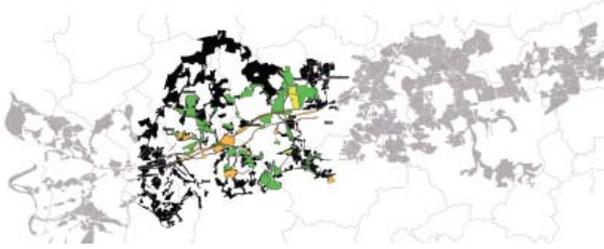
Both parts will be combined exemplarily with actual sites serving as illustrations.

Practical planning part

The starting point for the site selection within the investigation corridor were the site declarations from the participating project partners. Through intensive dialogue with the partners an attempt was made to assure that the selections represented the different site types. While processing the data it soon became apparent that the individual sites did not automatically match the separate projects that would make sense from a regional perspective. Often the existing projects, which are made up of many individual sites, have multiple proprietors because of their spatial-typological location between cities. This situation, which is typical for projects in the Emscher Landscape Park, not only contributes greatly to the implied maintenance deficits, but also requires alternative view points for the "defined projects" on the one hand and the project partners' "declared sites" on the other. Whereby the "declared sites" always make up a subset of the "defined projects".

In this way approx. 90 project sites were

singled out, which will be subject to closer examination. The wide range of site types found in the site pool mirror the distinctive potentials of the future regional park maintenance scheme.



The content control within the “MDV” framework constitutes a product-oriented approach, which finds its analogy in two levels of operation:

- On the regional park level, an affirmative structural transformation of an actual place and infrastructure
- On the level of local and regional open spaces valuable to the regional populace

Thus, the recommendation of the Emscher Landscape Park 2010 Masterplan, which sees the ELP divided into four different product classes (see ProjektRuhr 2005), was accepted and further developed. As such, the ELP is divided into the following product classes:

- A. Core areas of the post-industrial cultural landscape (New Emscher Valley and the ELP’s regionally important ‘flagship projects’)
- B. Post-industrial cultural landscape (very industrially transformed areas with high residential density in the regional green corridors A/B/C/D)
- C. Post-industrial cultural landscape dominated by agriculture and forestry (in the regional green corridors E/F/G)

D. Primary nature conservation areas

Within this simple division the site type level forms groups of park products. The previously mentioned individual “defined projects” are defined as the park products.

The classification of individual park products into one of the four product classes is not primarily made for the differentiated study of all possible open-space function and types of public and private green and open spaces, but more to work out regional specifics and prioritise certain regionally-typical attributes that make up the image of the regional park. The origins of this approach – already in the analysis construed as a method of planning rather than being scientific – is the existing urban landscape with its diverse characteristics in the seven regional green corridors and the central east-west green corridor with the New Emscher Valley.

As a consequence there is also the talk of primary functions, which were assigned to the individual product classes and are operationalised based on the properties of the individual park products. This operationalisation is made on the one hand via a comparatively general checklist, which is based on the primary function level and poses requirements, for example, for the “goals of tourism”: guarantee of intact trails, functional parking, a clean overall impression, etc. On the other hand it is made via a differentiated description of



goals, which is based on the conceptual and planned goals of the individual park product and above all takes into account special site characteristics.

The description of the goals of individual park products is supplemented by an object catalogue, which is tailored to the needs of the Emscher Landscape Park and is compiled in a manner consistent with a product-oriented approach (see Klärle 2006,; 50f / Buhmann and others 2000).¹

The relevant geoinformation will be administered and processed with a GIS (Geographic Information System) to achieve two goals: Firstly, to use the existing data from the different project partners; secondly, to give the product partners insight and/or access to the data that is of utmost importance to them.

In detail, data from the product partners was collected on two levels:

1. On the "defined project" level
 - The geoinformation about the regional development planning
 - The geoinformation about the zoning plans
 - The geoinformation about the landscape planning
 - Stop information from the public transit network (VRR)
 - Brownfield site list
 - Actual utilisation mapping from the RVR related to the project sites themselves and the surrounding area (one to three km radius)
2. On the level of the project partners' declared sites
 - Maintenance deficits and problems

- Maintenance and service costs
- Standard of maintenance

The data which is collected from the defined projects is primarily meant to help choose the goals for the individual site, whereas the data from the declared sites is primarily collected to steer future maintenance.

The actual assembly of the data resources, which are to be a foundation for the regional park maintenance scheme, faces many difficulties²:

- A part of the necessary vector data was only available as pixel data (pdf, jpg or tif) and had to be digitalised manually.
- The data resources from the individual project partners were of a varying quality (information in parts digital and comprehensive, some of the project partners' information is missing and/or not or insufficiently digitalised).
- The existing databases have limited content compatibility (for example, the categorisation of formal and informal planning).
- The submitted digital vector data were not compatible because of different digitalisation methods and had to be pieced together on a standardised scale of 1 : 5,000 (DGK5).
- The majority of the accessible databases from GIS systems had to be reviewed and edited for the research project (for example, the public transit stop data from the VRR to assess access to public transport, categorisation of zoning and landscape plans).

The abundant zoning, planning and project data for the various locations finds

¹ Hereby it became apparent in the starting phase that not all of the project partners had such catalogues, or that the object catalogues differed greatly in detail. This corresponds above all to the degree of differentiation.

² The named difficulties will probably be run into at varying degrees when implementing and assembling similar databases. Especially when data from various project supporters and parties are combined.

its way into a corresponding database, which allows for inquiries related to the research project. It also offers a foundation for the future regional park maintenance scheme and an effective and user-friendly administration tool.

The captured geoinformation is issued on standardised data sheets, which are produced with the help of GIS software.

Scientific-theoretical part

The scientific-theoretical part of the project dealt with reviewing and evaluating the existing positions, approaches and research in the field of urban sprawl. This step forms the basis for further treatment of the question of whether the development, design and maintenance of the green and open spaces is an appropriate instrument that will lead to sustainable development and improvements in design quality for urbanised landscape and conditions in the urban sprawl of the agglomerates.

The build-up of a regional ecological cycle constitutes one possible field of research. Closely related to this is the search for new economical markets in the Emscher Landscape Park, which can help finance maintenance in the mid to long range.

In this respect, three project approaches can currently be developed for or on the Emscher Landscape Park sites:



1. Rainwater harvesting

Together with the EmscherGenossenschaft a total of approx. 12 residential areas were identified where the decoupling from the water supply network and decentralised rainwater harvesting failed due to, amongst other things, a lack of available land. As a result of a detailed analysis three different exemplary project areas in and around green corridor C were chosen:

- **Boymannsheide** Bottrop housing development – conversion of a water catchment to a new watercourse so that the bordering developments can also be decoupled
- **Isolated housing development** – Eichkamp development in Gelsenkirchen Resse – decoupling of the forest settlement through the consolidation of neighbouring woodlands
- **Resser Mark** subdivision in Gelsenkirchen Resse – use of neighbouring woodlands for rainwater harvesting

2. Decentralised sewage treatment

The assumption that the decreasing population in the Ruhr area would result in some housing developments becoming so thinly populated that the maintenance of the sewage system would no longer be economically viable has, after an in-depth analysis, been proven wrong. Talks with the Sewage Authorities, Environment Agencies, City Planning Departments and statisticians in Gelsenkirchen and Essen didn't find any correlation here. The current – although not yet thoroughly founded – findings show, that in both cities a diffused, evenly distributed decrease in populations is taking place. There are districts which are hard hit by the decrease, such as Gelsenkirchen Rotthausen or Essen-Stoppenberg, but there aren't any vacancy concentrations in any residential area which are a cause for alarm. The vacancies are apparently spread-out. Further detailed analyses of

selected residential areas are nonetheless to be conducted.

The close contact with City Planning in Gelsenkirchen has resulted in a slightly different approach to the subject of decentralised waste water management:

The former children's hospital Gelsenkirchen- Erle/North is being moved. The existing isolated housing development in the middle of green corridor D is to be transformed into a premium residential area. Whereby, a decoupling from the central sewage disposal system makes economical sense because of the location. Furthermore, elements of a sustainable residential development can be tried out here in an exemplary fashion. To this end a detailed urban planning study will be conducted by architecture students of TU Darmstadt under the auspices of the MDV research project in the Summer semester 2007.



3. Biomass – uses, creation and recovery in the ELP

Building on the “urban forest use” platform in the ELP (MUNLV / PROJEKT RUHR (2005)) – which is being pursued by the Environment Ministry of North-Rhine Westphalia – an overview was made of the activities related to wood use in the ELP, which has been expanded to include uses of biomass. Whereby, it has been shown that a variety of activities and actors are already operating in this field. The utilisation of wood and wood products for

energy production is already widely established. That's why the development and availability of optimal logistics in this region is of interest for the ELP. With the collaboration of the various actors a special field of biomass utilisation – the production of energy crops – will be further researched. The following points will be handled and examined in detail:

- Building of a wood yard, a wood-based CHP and a short rotation coppice on the premises of the former Lohberg coal mine in Dinslaken on the western edge of the ELP – being handled by the Ministry of the Environment and Conservation, Agriculture and Consumer Protection of the State of North Rhine-Westphalia, Wald und Holz NRW, MGG/DSK (Deutsche Steinkohle AG) and the city of Dinslaken (“urban forest use” platform in the ELP)
- Development of the former Hugo coal mine in Gelsenkirchen Buer, construction of a biomass power station with various technical components, installation of a short rotation coppice on the former coal mine of approx. 30 ha – being handled by MGG/DSK, with the support of the city of Gelsenkirchen and the MDV
- Planning of further research proposals/projects about biomass utilisation in the ELP through the MDV project together with the Fraunhofer Institutes Umsicht, Oberhausen and Logio, Dortmund, the MGG/DSK and the RVR

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