Green infrastructure charter

Ruhr metropolis

People. Nature. Space.

REGIONALVERBAND RUHR

Content

Preamble

How can we live well in the Ruhr metropolis in the future?

Green infrastructure is key to answering these questions in a positive way. It encompasses all types of green space and is an essential infrastructure that serves us – whether it's the shady tree outside our front door, the small neighbourhood park where you can relax and play, or the cold-air production area in the regional green corridor that provides cooling during hot spells.

Green infrastructure has emerged as a new planning concept in urban and regional development. It came about with the renewed understanding that the health of the ecosystem and human health are linked. Green and open spaces are now seen as infrastructure and part of public services. Green infrastructure represents a strategic, integrated planning approach that considers all green space across areas of responsibility and promotes and makes specific use of its multiple functions.

In the future, green infrastructure must no longer be viewed in isolation; rather, it should be seen as part of the question as to what kind of cities and regions we want to live, work and recreate in. The sustainable transformation of the Ruhr metropolis is an opportunity to redistribute and upgrade the public space and make it multifunctional in such a way that our cities and districts become more liveable and allow us all to benefit.

Tradition and vision – on the way to becoming the greenest industrial region

In the Ruhr metropolis, green infrastructure is closely linked to industrial and cultural history. The safeguarding of regional green corridors more than 100 years ago enabled a strong open space system to be integrated into the urban landscape. At the same time, new city and district parks were created as places of wellness and encounter.

The IBA Emscher Park project was the first time that an already strongly modified cultural landscape was restored, including its natural functions. The quality of the green space came into focus and took on societal relevance. The Ruhr metropolis is thus a pioneer in a sphere of activity that is more topical than ever in the UN Decade of Ecosystem Restoration (2021–2030).

With its green infrastructure approach, the Ruhr metropolis is embarking on the next era of green development, one that is more integrated and far-reaching with a strong focus on future challenges. Green infrastructure, as an integrating factor in urban development, unfolds its added value for people, nature and space.

This is not to say that certain basic considerations and strategies of the past are no longer taken into account. With the ambitious goal of becoming the greenest industrial region in the world, the Ruhr metropolis is continuing the established process of transformative change. The green infrastructure charter transfers and adapts the approaches of the past to the current requirements for action and future tasks. At the same time, this process is understood as an interdisciplinary task and a special focus is placed on extensive participation in the region.

The high proportion of green space in the region's polycentric settlement structure becomes a locational advantage and the landscape relics of structural change take on a new significance. The charming biodiverse industrial nature and the slag heaps with their fantastic views are a truly unique and characteristic feature of the regional green infrastructure.

In the future, the Ruhr metropolis will take a more strategic look at all its green and open spaces and expand their many functions and network-like character. This also means looking at all the grey space such as brownfield land, streets, drains, roofs, façades and courtyards, and making it greener, more usable and more attractive.

The International Garden Exhibition 2027 is a central project for these future-relevant topics in the Ruhr metropolis. The exhibition will address these topics and implement examples with five major locations and an extensive network of decentralised green infrastructure projects.

This will allow the region to prepare for the major challenges of the future, including combating climate change and the loss of biodiversity, strengthening regional resource cycles and accommodating the diverse lifestyles of a growing population. The Covid pandemic also called attention to the importance of open green spaces for life in the city and for greater environmental justice.

Being a polycentric region makes the Ruhr area perfect for the linking of green and grey infrastructure.

The green infrastructure charter as a guiding principle for future development

The challenges and tasks for the future described above require our region to make adjustments, for which the green infrastructure project offers possible solutions. Many good ideas, approaches and projects are already in place in this context. What's still missing is a jointly developed and regionally coordinated vision for the future of our green infrastructure. Defining such a vision and making it a voluntary commitment for the future helps to adapt measures to regional challenges and to contribute to the bigger picture with each step.

The green infrastructure charter will thus function as a comprehensive strategic framework in the future. Guiding themes and overall targets form the basis for working out objectives and detailed solutions, negotiating them and jointly implementing them.

Inner-city parks bundle a variety of green infrastructure functions of the green infrastructure

Green infrastructure can be found on various spatial levels

What is the green infrastructure in the Ruhr metropolis?

Green infrastructure is one of our key bases for living in the Ruhr metropolis. From regional green corridors and large parks, rivers, forests and fields, urban rooftop and community gardens to planted balcony boxes, it significantly influences the quality of life in our districts and our region as a whole. The region's many parks and the organically grown industrial nature are unique and reflect the green transformation of the Ruhr metropolis.

The green infrastructure serves as a habitat and refuge for people as well as the countless other creatures in the Ruhr metropolis. It provides us with food, raw materials and fresh air and acts as a catalyst for the metabolic processes of the (urban) ecosystems. It regulates our urban climate and its close-meshed urban network that absorbs rainwater and allows it to evaporate and seep back into the ground makes it a key factor in climate adaptation. The many grey spaces in the Ruhr metropolis hold enormous potential for creating more green infrastructure.

Charter drafting process: From the region – for the region

The green infrastructure in the Ruhr metropolis has always been a joint task. Public administrations, regional and local associations and initiatives as well as countless other actors shape the region's green space. The result of these joint activities is a varied, diverse and green Ruhr metropolis with a unique green infrastructure. The Ruhr Regional Association (RVR) has been supporting this development for over 100 years as a moderator, initiator and driving force and implementing its own projects and measures.

What can the green infrastructure charter do in this regard?

The best way for the region to carry out the tasks of the future is in close cooperation with all stakeholders. The joint commitment of the various actors, seeing the city and the surrounding countryside as one region and overcoming territorial and organisational boundaries play a big role in this. This makes the charter an invitation and a call to participation and cooperation. It addresses all those who develop, build, maintain and otherwise support or identify with green infrastructure. The charter can only be successfully implemented if as many actors as possible get involved using their respective tools and capabilities. The stakeholders' participation in the charter and their identification with it will make the many projects and initiatives more visible beyond region. The charter is also designed to draw attention to the fact that green infrastructure helps make the Ruhr metropolis more liveable.

From the outset, finding a vision for the development of green infrastructure in the Ruhr metropolis meant gathering and discussing the many ideas from the region to help develop the region in a future-oriented way. The green infrastructure charter is therefore not a report by individual experts, but rather the result of a participatory process.

The Green Infrastructure Networking Days in 2020 and 2022, which had several hundred participants each, were important milestones within this process. The results were further honed during additional practical dialogues, where important stakeholders from the region were heard on their views on green infrastructure in the Ruhr metropolis. The impressions, views, wishes and opinions gathered during these events found their way into the green infrastructure charter, along with numerous position papers, expert reports and strategies.

The charter carries professional and political weight for green infrastructure. It serves as a political declaration of intent, an informal commitment and a development guideline.

Workshop situation during the digital Green Infrastructure Networking Day in 2022


RUHR
MacBook Air

Principles of green infrastructure for the Ruhr metropolis

The term “green infrastructure” not only refers to the physical green elements, such as urban trees or regional parks, but also to the planning approach that underlies the development of green infrastructure. This approach is characterised by the following planning principles, which are adhered to in the implementation of all objectives.

Connectivity and multi-spatiality – developing green infrastructure as an interconnected system

Green infrastructure is more than the sum of its parts. Elements of the green infrastructure form an interrelationship where, for example, a shady tree absorbs rainwater and generates evaporation for cooling during hot spells. A park is only a true place for relaxation and recreation if it is not too noisy and easy to get to. Green infrastructure should therefore always be thought of as a system and planned with this in mind in order to ensure functional and spatial interconnections.

Integration – merging green and grey infrastructure

Seeing green elements as part of infrastructure also means seeing them in the context of other technical and social infrastructures, recognising their utility and harnessing synergies. Green infrastructures can complement the functionality of technical systems or replace them entirely. Under the planning principle, the entire area of the city is understood as space with potential; for example, pressure can be taken off the rainwater drainage system in the long term by unsealing surfaces, with roof and façade greening as well as decentralised evaporation and infiltration. This approach requires integrated planning processes and the implementation of solutions that piggyback on technical infrastructure rehabilitation processes that are required anyway.

Multifunctionality – promoting multiple functions

Green infrastructure takes into account the totality of all green and open spaces, across administrative boundaries and jurisdictions. It can make a significant contribution to the major future tasks in urban development. Value is added to its many functions. This also means leveraging multiple smart surface use. Roofs, for example, can be biodiverse, generate energy, capture rainwater and be recreational spaces all at the same time.

Cooperation – encouraging cooperation and alliances

To leverage the great potential of the green infrastructure in the Ruhr metropolis and to move closer to becoming the greenest industrial region in the world, the many stakeholders must work together. Elements of green, technical and social infrastructure must be integrated and planned and developed across disciplines. An individual project can have a greater impact in conjunction with other projects, including from other municipalities. Green infrastructure is also largely in private hands. Understanding it as a joint task brings the green infrastructure charter to life.

Green Ruhr area: Typical (cultural) landscape in the region

Guiding themes of green infrastructure in the Ruhr metropolis

Green infrastructure can make important contributions to solving the major challenges of our time – social cohesion and participation, adapting to climate change, achieving climate neutrality and environmental justice, preserving biodiversity and the transition towards a sustainable, circular economy.

The five guiding themes define the development intentions for the green infrastructure in the Ruhr metropolis. This will allow the green infrastructure to unfold and meet these challenges.

I. LIVEABLE RUHR METROPOLIS

Protecting quality of life and creating an identity through green infrastructure

The open spaces in the Ruhr metropolis have a significant influence on the quality of life in the region and in the individual districts. The unique inventory of green and open spaces must be safeguarded, further developed as a multifunctional and interconnected system and it should be adapted to changing conditions in order to contribute to social cohesion, the well-being and health of the people and ecosystems and to further enhance the region's green image.

II. CLIMATE-ADAPTED RUHR METROPOLIS

Ensuring resilience and climate comfort through green infrastructure

Green infrastructure is essential to preparing our urban landscape for climate change. Taking a systemic understanding of the interrelationships of rainwater management and flood and heat prevention means tightening the network of green infrastructure, making it climate-adapted and developing the Ruhr metropolis into a sponge region. At the same time, a well-developed and carefully planned and maintained green infrastructure reduces damage caused by drought, storms and erosion.

III. BIODIVERSE RUHR METROPOLIS

Enabling cohabitation and greater biodiversity through green infrastructure

A lot more needs to be done to combat the rapid loss of species and ecosystems. Instead of mere co-existence, this guiding theme aims to actively promote co-habitation of humans and animals. Green infrastructure is the fundamental basis for biodiversity and stands for always considering crosslinking and qualifying urban green and large open spaces as habitats for people and animals.

IV. CLIMATE-JUST RUHR METROPOLIS

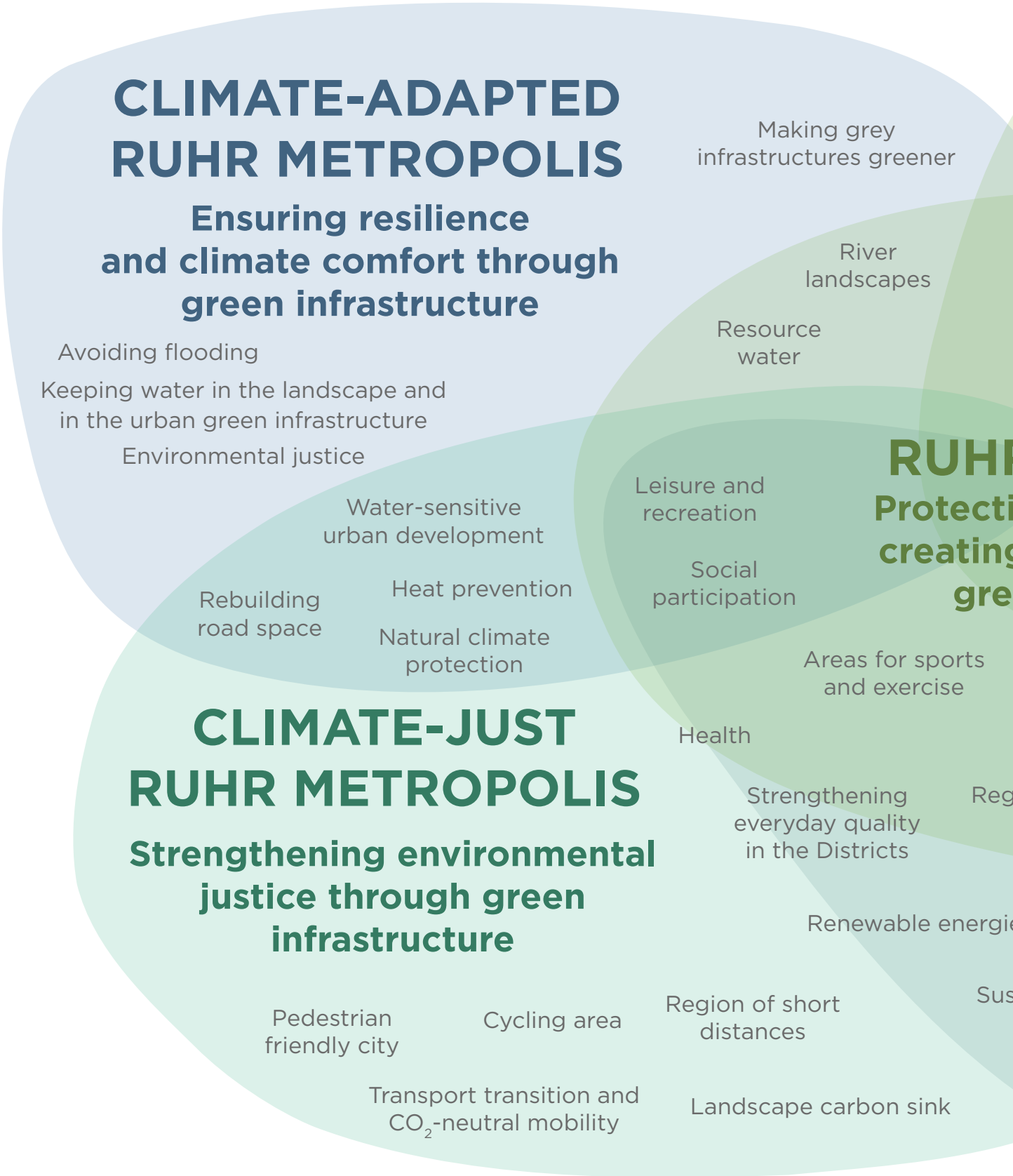
Strengthening environmental justice through green infrastructure

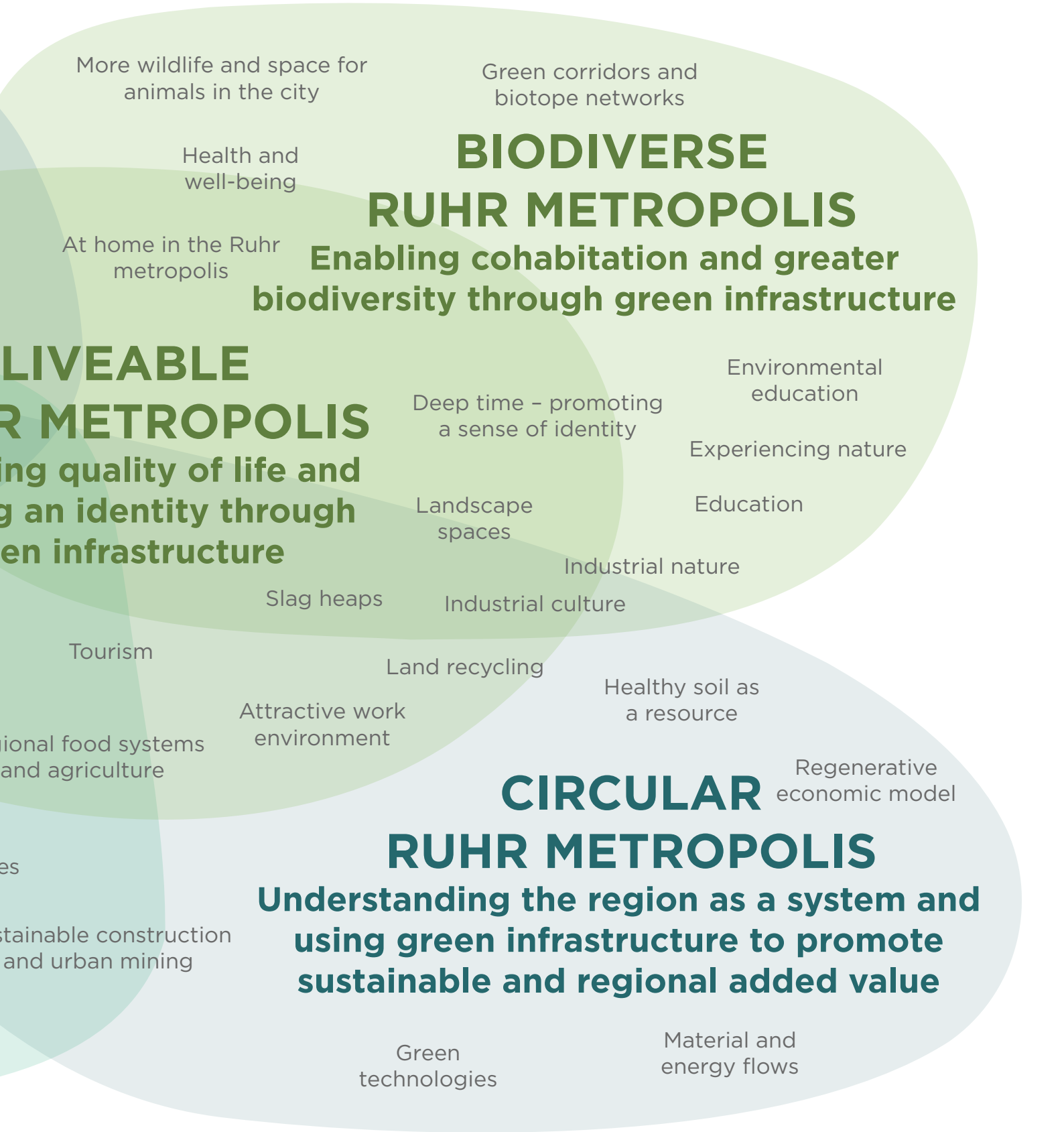
Achieving climate neutrality by 2045 in response to climate change requires profound adjustments to urban development and mobility. Green infrastructure, in the form of green thoroughfares, gives major impetus to the mobility transition. The aim is also to compensate for the often unevenly distributed consequences of climate change and other negative environmental impacts that disproportionally affect disadvantaged sections of the population. This can be done by upgrading green infrastructure, specifically in dense and socially disadvantaged districts, and by integrating it into new developments from the outset. Better access to green and open spaces will also significantly help improve people's health in the Ruhr metropolis.

V. CIRCULAR RUHR METROPOLIS

Understanding the region as a system and using green infrastructure to promote sustainable and regional added value

A regenerative economic model is required for the Ruhr metropolis to become the greenest industrial region. The "Circular Ruhr metropolis" guiding theme focuses on the aspects of material flows, regional resource management and therefore also soil care. With this in mind, the productive and value-adding properties of green infrastructure must be promoted, such as with regard to food, energy, water cycles and recyclables. Furthermore, the green infrastructure must be strengthened as a location factor for business and tourism.


CLIMATE-ADAPTED RUHR METROPOLIS
Ensuring resilience and climate comfort through green infrastructure
Avoiding flooding
Keeping water in the landscape and in the urban green infrastructure
Environmental justice
Water-sensitive urban development
Rebuilding road space
Heat prevention
Natural climate protection
Making grey infrastructures greener
River landscapes
Resource water
Leisure and recreation
Social participation
RUHR
Protecti
creating
gre
Areas for sports and exercise
Health
Strengthening everyday quality in the Districts
Reg
Renewable energie
Sus
CLIMATE-JUST RUHR METROPOLIS
Strengthening environmental justice through green infrastructure
Pedestrian friendly city
Cycling area
Region of short distances
Transport transition and CO_2-neutral mobility
Landscape carbon sink


More wildlife and space for animals in the city
Green corridors and biotope networks
Health and well-being
BIODIVERSE RUHR METROPOLIS
Enabling cohabitation and greater biodiversity through green infrastructure
At home in the Ruhr metropolis
LIVEABLE R METROPOLIS
ing quality of life and g an identity through en infrastructure
Deep time – promoting a sense of identity
Environmental education
Experiencing nature
Landscape spaces
Education
Industrial nature
Slag heaps
Industrial culture
Tourism
Land recycling
Healthy soil as a resource
Attractive work environment
ional food systems and agriculture
Regenerative economic model
CIRCULAR RUHR METROPOLIS
Understanding the region as a system and using green infrastructure to promote sustainable and regional added value
es
stainable construction and urban mining
Green technologies
Material and energy flows

Protecting quality of life and creating an identity through green infrastructure

The Ruhr metropolis has a high proportion of green space; because of the region's polycentric settlement structure, this can be found between cities as well as in the cities. This green infrastructure not only has recreational and connective value and contributes to a sense of identity, it is also key to climate change adaptation and the conservation of biodiversity. It promotes environmental justice and safeguards the quality of life in the region.

In view of this, it is important to protect the open space system and strengthen its interconnected and multifunctional character – from the open landscape spaces to the regional green corridors to the diverse inner-city green and open spaces. The everyday green space in the districts is particularly important for protecting quality of life. Improving everyday green space calls for integrated urban development that includes community participation. The conversion of industrial sites in the last 30 years has doubled the amount of public green space. This trend is to be continued. To this end, more grey space is to be strategically developed to expand the green infrastructure. The special features of the open spaces in the Ruhr metropolis are to be emphasised in the future to turn them into identity-forming ambassadors of the region. Examples include the region's unique industrial nature, its slag heaps, parks and gardens.

Spontaneous land appropriation on the canal bank

Green infrastructure creates a sense of identity

Safeguarding and developing the open space system and its various functions

In the future, the open spaces should be viewed more as a spatially interconnected system and essential and valuable infrastructure with many functions. The open spaces are to be strategically safeguarded and their quality improved. Examples include...

- Conceiving of and planning the open space system as spatially multi-level and across competencies. This includes the large open landscape spaces, the regional green corridors with their important connecting function, the industrial nature typical of the Ruhr region, the large parks and the everyday green space in the districts;
- Highlighting the multiple functions of green infrastructure and making specific use of them for the sustainable development of the region.

Improving quality of life through everyday green space in the districts

The Covid pandemic has raised awareness of urban green spaces and their impact on the quality of everyday life: on people's doorstep, in the district, on the commute to work, to school or to kindergarten. The accessibility and quality of everyday green space are a key factor when it comes to environmental justice. The quantity and accessibility of the green and open spaces in the Ruhr metropolis are already at a relatively high level. This must be developed further, improved and adapted to changing requirements. In order to achieve this...

- the quality of existing public green spaces in the urban districts must be improved and new green spaces, such as for play and exercise, created;
- privately owned potential green space (such as the green space of the housing associations and company premises) as well as the outdoor areas of the social infrastructure (such as hospitals and schools) must be included;
- community and personal commitment to urban greening, such as balcony plants, urban gardening and tree sponsorships, should be encouraged.

Expanding the open space system by enhancing grey areas with potential

While there is a relatively high proportion of green space in the Ruhr metropolis, there are also many sealed, grey areas and buildings. These areas can be incorporated into the green infrastructure or even be replaced by it. For this to succeed…

- the graduated development of brownfields must be accelerated (such as by unsealing some areas, safeguarding spontaneously grown flora and making areas usable as open spaces);
- buildings should be greened (green roofs and facades);
- the grey infrastructures should be functionally enhanced by green infrastructure (such as greening of road space and railway embankments, the re-naturalising of drains and rainwater management infrastructure);
- the partial unsealing and greening of city squares, school playgrounds and other outdoor areas of buildings should be accelerated.

Enhancing the identity-forming character of open space

The identity-forming properties of open spaces must particularly be promoted, as they contribute significantly to a new green image of the region. They are also key locational and tourism factors. The following needs to be strengthened above all…

- the slag heaps, which epitomise the green transformation and which are being remodelled from formerly “forbidden places” into identity-forming locations and places for tourism;
- industrial nature, which is of particular cultural value and of value for biodiversity specific to the Ruhr region and which opens up new land potential;
- the large park lands with regional appeal, such as the large city parks and exhibition gardens, are to be strengthened as anchor points within the green infrastructure network;
- the open landscape areas outside the core zone are to be developed more intensively and turned into regional parks with their unique features – from the Lower Rhine river terraces to the Westphalian Bay to the foothills of the Bergisches Land mountains and the Sauerland and Siegerland regions.

With its high proportion of green space, the Ruhr metropolis is already well-positioned for sustainable development. On the one hand, a long tradition of green space development has resulted in large continuous open spaces. However, as a result of the region’s rapid and polycentric process of urbanisation, there is also a lot of incidental green space. The guiding maxim is to make the best possible use of the green potential in terms of quantity, function and quality and to further strengthen this potential. This safeguards quality of life in the region, creates a sense of identity and makes the Ruhr metropolis physically and figuratively the greenest region in the world.

Ensuring resilience and climate comfort through green infrastructure

Global climate change has a strong impact on the Ruhr metropolis. Many people live together in a confined space in the core cities and are exposed to heat and heavy rainfall, among other things. The open spaces such as agricultural land, open landscapes, water bodies and forests can also be affected by droughts, erosion, floods and storms. The Ruhr metropolis must become resilient to such consequences of climate change. One way is to make it more resilient to weather events. But flexibility of action is also needed in order to be able to react to the as yet unpredictable effects of climate change.

It is a core aspect of climate adaptation in the Ruhr metropolis to consider the interaction of the different effects of climate change in all the different settings from the perspective of green infrastructure. And the adjustments should have as many positive effects as possible. The focus here should not only be on heat prevention, but also on climate comfort. At the regional level, a more conscious approach to using water as a valuable resource must be found. Instead of discharging rainwater into the sewer system, it will be stored in cities and landscapes and used for irrigation and cooling during hot spells. This is particularly useful during heavy rainfall, as water retention and storage can prevent flooding. This will result in the Ruhr metropolis becoming one continuous sponge region. An essential aspect here is that the green infrastructure itself becomes resilient to the impacts of climate change, for example, by enabling irrigation and only using plants adapted to climate change and the specific local conditions.

Green-blue infrastructures are key elements in adapting to climate change


KARSTADT
IKEA

Re-natured bodies of water help make the Ruhr area resilient in several ways

Developing the Ruhr metropolis into a sponge region

Man-made climate change is already causing repeated periods of drought, in which agriculture and forestry require additional water, city trees have to be artificially irrigated and ecologically valuable wetlands dry up. Damage from heavy rainfall is also becoming more frequent.

Periods of extremely high or extremely low precipitation can also be expected to occur more often. That's why the Ruhr metropolis needs to find a new way of dealing with water as a resource. Green infrastructure will help turn the region into a sponge region. In the sponge region...

- water must be recognised as a valuable resource, as diverting precipitation during extreme weather events is ineffective and also wasteful because it can instead be used during dry spells;
- sponge cities and sponge landscapes must be thought of as an integrated whole and developed together as parts of a regional system;
- decentralised rainwater retention for flood and inundation prevention must be considered together with infiltration and evaporation for heat prevention.

Increasing heat prevention and climate comfort in cities

In the Ruhr metropolis, especially in the densely built-up city centres, the effect of climate change is increasing heat stress. Rising temperatures and the lack of cooling processes create urban heat islands. With the help of green infrastructure, heat-stressed areas will be generally cooler and climate comfort areas will be created, i.e., green, shady and cool spaces. Green infrastructure helps with cooling as follows...

- through air exchange cold air production areas and air stream channels into the cities are safeguarded;
- greening of buildings with roof and façade greening;
- unsealing surfaces and thereby allowing transpiration and reduced radiation reflection;
- the evaporation of retained rainwater (for example on green roofs or planted evaporation areas);
- shadowing, ideally provided by trees and other shady vegetation.

Improving flood and inundation prevention

Heavy rainfall caused major damage in the Ruhr metropolis in the past. The damage was either a direct result of heavy rainfall seeping into the ground or occurred at a later time due stream and river flooding. More frequent and more severe heavy rainfall is expected in the future. Green infrastructure can significantly contribute to reducing run-off and thus damage. The following is needed to prevent flooding and inundation...

- and improved floodplain development of watercourses to slow run-off from the source to the river mouth;
- decentralised retention and storage of rainwater through unsealing and infiltration measures. In addition, green infrastructure needs to be integrated more into grey infrastructure (such as through the development of run-off-free housing developments and green roofs);
- the construction of emergency water outlets in the cities.

Maintaining resilient, vital green infrastructure

Green infrastructure is itself exposed to the impacts of climate change. The aim is to make the green infrastructure in the Ruhr metropolis resilient against climate effects such as drought stress, erosion and storms. To do this, its vitality and resilience must be safeguarded through planning and maintenance. This will be done in the following ways:

- planting flora that is well suited to the location and to climate change;
- avoiding soil erosion and jet effects;
- ensuring adequate water supply for the green infrastructure (including through the use of rainwater from sealed surfaces);
- public and private commitment to the care and maintenance of green infrastructure must be encouraged.

Green infrastructure has multiple talents when it comes to climate adaptation: It can simultaneously ensure heat and flood prevention, enhance well-being and reduce damage. Therefore, the expansion and improvement of the green infrastructure in the Ruhr metropolis should be used to develop sponge landscapes and sponge cities and to link them to create a sponge region. In this sponge region, water will be used as a resource for heat and flood prevention in the best possible way. This will make the Ruhr metropolis resilient and able to adapt to future climate change-related challenges.

Enabling cohabitation and greater biodiversity through green infrastructure

With its high proportion of green space and its diverse urban green spaces, industrial natural areas and cultural landscape, the Ruhr metropolis has a unique biodiversity. Strengthening the region's habitats through green infrastructure is in the best interest of these species and of humans. This is because the health of ecosystems is closely linked to human health. The goal of the green infrastructure in the Ruhr metropolis is not just co-existence, but rather co-habitation – the living together of people, plants and animals.

Ever-increasing land consumption still is one of the major challenges in this regard. Green infrastructure helps to counteract this issue. Particularly precious and still quite natural areas must be protected and their individual character promoted. The network structures are to be strengthened and expanded. It is also important to keep the habitat function of green infrastructure in mind when managing cultural landscapes and in the design of urban open spaces. In order for people to recognise the added value of biodiversity, they must be able to experience the living environments of animals and plants. This enables the many species as well as the people in the Ruhr metropolis to live a good life.

Insect hotel as additional living space

Biotope development on a former industrial area

Protecting and developing refuges, strengthening the biotope network

The habitat and connecting function of the green infrastructure network must be secured, expanded and improved. This in turn promotes biodiversity. To put this into practice, the following needs to be done:

- protected areas must be enhanced in terms of their area coverage and state of development;
- typical and rare biotopes such as heaths, heather moors and rough grasslands must be protected and developed into refuges;
- the potential of industrial nature reserves and brownfields must be identified and developed;
- visitor guidance must be provided. Nature should be experienced and areas with sensitive species must be particularly protected (especially during breeding and seeding season).

The regional green corridors are of particular importance for connecting habitats with each other. These should be further developed with animals in mind, making them more accessible and interlinked. Similarly, the natural dynamics of watercourses and floodplain landscapes must be strengthened.

Daring more wilderness in the urban green space

The urban green space in the Ruhr metropolis is particularly distinctive and rich in species. There is an increasing desire in society to experience urban nature. This is associated with a change in the aesthetics of open spaces in favour of more urban wilderness. The quality of living for animals and plants will be considered more specifically and the urban green infrastructure will be developed with co-habitation in mind. This will be done as follows:

- increasing the amount of green space in cities and incorporating habitat functions into its design and maintenance;
- biodiverse urban green space as a biotope will be given particular consideration and protected (such as cemeteries with old trees);
- the range of roosting and feeding sites for target species, such as certain birds, insects and bats, will be expanded.

Turning cultural landscapes into strong habitats

The cultural landscape (agricultural and forest land) makes up more than half of the total area of the Ruhr metropolis. In agricultural landscapes in particular, the intensification of agricultural practices has long been accompanied by a significant loss of biodiversity. The significant decline in open land species is one example of this. For co-habitation to function better, it is critical to do the following:

- more habitat structures (such as flowering strips and extensive grassland) must be created in the cultural landscapes;
- organic farming must be expanded.

In the case of forests, restructuring and the promotion of biodiversity are already part of the climate change adaptation strategy. In order to strengthen their habitat function...

- the overall proportion of forest must be increased and biodiverse mixed forests promoted;
- forest management must be more in keeping with nature and process protection areas must be expanded.

Strengthening nature experience and environmental education

Communicating the enormous value of nature and all its species is the cornerstone of nature conservation and the preservation of biodiversity. For this reason, it must be possible for humans to enjoy and experience nature.
Regional environmental educational programmes must be strengthened, expanded and promoted. This in particular includes the following:

- expanding decentralised environmental education offerings;
- bringing in line, promoting and improving the qualify of the central regional environmental educational offerings (including regional park development);
- expanding nature-experience spaces as places of “wilderness in the city.”
- giving people the chance to experience deep time (the geological origins of landscapes and their cultural history).

A rapid loss of biodiversity can be observed in the Ruhr metropolis. To stop this negative trend and improve co-habitation, more attention needs to be paid to the habitat requirements of different species in the urban landscape. This applies to the management of the cultivated landscape as well as the design of cities and urban open spaces. This safeguards the integrity of ecosystems and thus our livelihood. This also allows people to experience nature and thus significantly contributes to our health and well-being. The expansion of the green infrastructure in the Ruhr metropolis as the fundamental scaffolding for biodiversity and the strengthening of its characteristic features, such as the Ruhr-specific industrial nature, play a crucial role here.

Strengthening environmental justice through green infrastructure

The Ruhr metropolis will have to make a significant contribution to climate neutrality by 2045 to protect the climate and to keep the impact of climate change manageable. In addition to the global goal of reducing CO_2 emissions, climate protection in the Ruhr metropolis should go hand in hand with striving for environmental justice. Areas with a higher proportion of socio-economically disadvantaged households are particularly affected by current environmental stresses such as noise, air pollution or heat. In the future, green infrastructure is to be the link between active climate protection, the reduction of environmental pollution and the equitable distribution of environmental resources.

Green infrastructure itself absorbs CO_2 and therefore acts as a natural carbon sink. The Ruhr metropolis with its high proportion of open spaces already has great "natural climate protection" potential. This potential must be exploited better in the future. To save CO_2, green infrastructure should also be used to make mobility areas more attractive. This will encourage the use of climate-friendly forms of mobility. At the same time, easily accessible public open spaces provide opportunities for exercise and sports. This in turn will improve the health and well-being of the people in the Ruhr metropolis. In the urban development of the future, green infrastructure should enable a "triple inner development": structural compactness and short distances combined with high-quality open spaces and climate-friendly mobility offers.

An attractive network of cycle paths promotes climate-friendly mobility

Exercise facilities in the new local recreation area

Promoting health and well-being

Green infrastructure has a positive impact on health and well-being. The opportunity to exercise and play sports in a natural environment plays an important role. The mere presence of green infrastructure is beneficial to mental health. Green infrastructure should particularly be promoted in urban districts with little green space and high levels of pollution in order to contribute to intergenerational preventive healthcare. To implement this, the following is required:

- a well-maintained green infrastructure to improve mental well-being;
- turning green infrastructure in old and new districts into recreational areas for sports and exercise;
- creating sports and exercise opportunities along pathways in areas where there is little available space.

Accelerating triple internal development

"Triple internal development" refers to structural compactness ("city of short distances") combined with climate adaptation, green quality of stay and climate-friendly mobility offers. This approach minimises the negative consequences of building densification and creates added value, such as in the form of improved quality of life or CO_2 reductions. Already densely populated and polluted indoor areas will particularly benefit from this. This also has a positive impact on environmental justice. For this reason, the following needs to be done:

- the quality of existing densely built-up districts under environmental stress by providing green spaces near residential areas as well as climate-friendly mobility offers;
- planning new urban districts with the principle of triple internal development in mind;
- promoting mixed use and providing enough green space. This in turn avoids long distances that force people to take the car.

Promoting natural climate protection through the expansion of carbon sinks

The goal of the natural climate protection approach is to form synergies between nature and climate protection. Vegetation and intact soil means green infrastructure acts as a carbon sink and absorbs CO_2. This function must be further expanded, both quantitatively and qualitatively, in order to contribute to the climate targets. In urban settlement areas and cultural landscapes near cities, such measures also contribute to environmental justice. The following concrete measures should be taken:

- the expansion, improvement and further development of green infrastructure with an impact on the climate (such as moors, forests, floodplains and urban green and open spaces);
- the rewetting of dry moors and the preservation and maintenance of existing moors (also in combination with sustainable management practices);
- soil management practices that keep arable land healthy;
- the expansion and protection of natural forest development areas, the expansion of forest areas and the climatic adaptation of forests;
- the safeguarding and development of the CO_2 sink function in the urban recreational areas.

Enhancing the attractiveness of mobility areas

The mobility sector is essential for the Ruhr metropolis due to its polycentric structure. It also offers great savings potential when it comes to CO_2 emissions. Green infrastructure can help promote climate-neutral forms of mobility. For example, it can make the switch to climate-friendly forms of mobility more attractive and encourage people to adopt new forms of mobility. For more climate-friendly mobility in the Ruhr metropolis…

- attractive pavements and cycle paths should be created on local and regional routes for everyday and leisure traffic. This guarantees good accessibility of the local recreational areas without having to drive;
- using bicycles should become significantly more attractive (“invite to bike”). This requires more green space along pathways, more shady trees and better design quality and quality of stay;
- foot traffic should be encouraged (“invite to walk”), such as through well-designed, quiet pavements with signposting;
- cool “urban oases” should be created. These can ensure a high quality of stay while waiting for public transport (“invite to wait”).

Green infrastructure can contribute in many ways to climate protection and environmental justice. In addition to its ability to store CO_2 it plays a key role in climate-friendly mobility, since it avoids traffic that is harmful to the climate and increases the attractiveness of climate-friendly forms of mobility. Green infrastructure also creates spaces for sports and exercise and thus brings together preventive healthcare, climate protection and environmental justice.

Understanding the region as a system and using green infrastructure to promote sustainable and regional added value

The Ruhr metropolis is an important economic area due to its industrial past and its current position in science and services. A systemic shift to a regenerative economic model is required to continue the lead and to become the greenest industrial region in the world. Such an economic model makes resource consumption, management practices and supply chains sustainable and carbon-neutral.

This change must be managed on multiple levels. Green infrastructure can also make an important contribution, both in terms of a planning strategy and through the specific land use setting. These systemic interrelationships create far-reaching opportunities for a more cycle-oriented approach to material flows and production processes.

The focus is on taking much greater account of the importance of the natural environment and its resources, on making their management more sustainable in the long-term and on seeing the region and its energy, water, nutrient and food flows as more of a system and cyclical. This also means the specific promotion of the productive properties of the green infrastructure and improving regional value creation. Healthy soil is a basic requirement for this. More attention should be paid to soil protection in the future. The development of green infrastructure is one aspect of urban development; it is expected to bring significant impetus to sustainable construction methods and a circular approach to building materials.

Green infrastructure is productive in many ways and thus contributes to regional value creation

The Ruhr metropolis has good sales potential for local producers

Strengthening green infrastructure as a location factor for business and tourism

The transformation from the “grey” Ruhr area to the greenest industrial region is an important factor when it comes to attracting companies. The region’s green infrastructure is the basis for local recreation and well-being and is already now a significant tourism factor for the region, one that will be further expanded in the future. It is therefore necessary to…

- recognise and promote the green infrastructure as the basis for regional value creation in the area of leisure and local recreation;
- the value of green infrastructure as a location factor for companies is communicated to the public. At the same time, it is important to partner with committed companies to create greener and more diverse company premises.

Promoting productive properties of green infrastructure for sustainable resource use

Strengthening regional production processes is necessary in order to gain independence from global resources and supply chains, as well as for the carbon footprint. The productive potential of green infrastructure for the region should therefore be emphasised. This includes…

- the regional production, marketing and consumption of food. This is done, among other things, by diversifying agricultural land and making its cultivation sustainable, expanding urban agriculture and urban gardening projects and strengthening local marketing structures (“fresh from the region”);
- the regional production of resources (such as wood, natural insulation materials, etc.) on existing and new green infrastructure sites;
- advancing combinations of green infrastructure and solar energy generation, for example, in the form of green solar roofs or agri-photovoltaics that can lessen the effects of hail, frost and drought in horticulture and fruit cultivation;
- stabilising the water cycle and the utilisation of rainwater as a resource, especially in view of climate change.

Developing green infrastructure as an impetus for sustainable and circular building culture

Green infrastructure not only means protecting existing green space, but also actively developing it, for example, in the redevelopment of former industrial or railway sites, the creation of green links or new districts with a lot of green spaces. The construction of green infrastructure should become a driver for sustainable urban development and circular building by giving much more consideration to the life cycle of building materials, especially in landscape architecture. The green infrastructure created in this way must be of a high quality as well as durable. However, its structural elements, such as furniture, should be potentially recyclable. This includes...

- the acceleration of good building materials management and, through urban mining, using more recycled as well as renewable and carbon-binding building materials; this will keep the CO_2 footprint low or even offset it entirely and reduce the depletion of existing and finite raw material deposits;
- considering the possibility of and enabling the recycling of used building materials in the future;
- meeting sustainability standards in the construction of outdoor facilities.

Actively protecting and caring for the soil

Healthy soils are a basic requirement for green infrastructure to develop its full potential. Soil should therefore be understood as an important resource and protected as such. This includes...

- avoiding new building developments on agricultural land and on valuable soil. Instead, the densification and restructuring of existing urban areas should be accelerated;
- practising renaturalisation and unsealing where possible.

Active soil care in the region also includes...

- accelerating soil-conserving agriculture to protect the climate and biodiversity. It also includes paying attention to and promoting the soil health of other green infrastructures such as urban parks and allotments;
- not adapting soil to new use. Instead, natural conditions are taken into account and land use depends on the sensitivity of the respective soil;
- avoiding soil contamination by pollutants (such as microplastics).

In order to become the greenest industrial region in the world in the long term, and to make the shift to a regenerative economic model, the entire Ruhr metropolis with its natural resources must be understood as a system and the productive and value-adding properties of the green infrastructure must be more strongly promoted. Protecting the soil, moving towards sustainable urban development and the circular use of building materials are also essential cornerstones to achieving this vision.

Prospects of a green future

The green infrastructure charter was jointly developed and forms the framework for the future development of green infrastructure in the Ruhr metropolis. Its approval through the Ruhr Parliament gives the charta its political legitimacy. With it, the course for further interdisciplinary and inter-institutional collaboration to safeguard and develop the green infrastructure is set.

The charter contains guiding themes and goals. It serves as both a mandate and an invitation to everyone to fill the charter with life and to pave the way for making our Ruhr metropolis the greenest industrial region in the world. Let’s tackle this goal together!

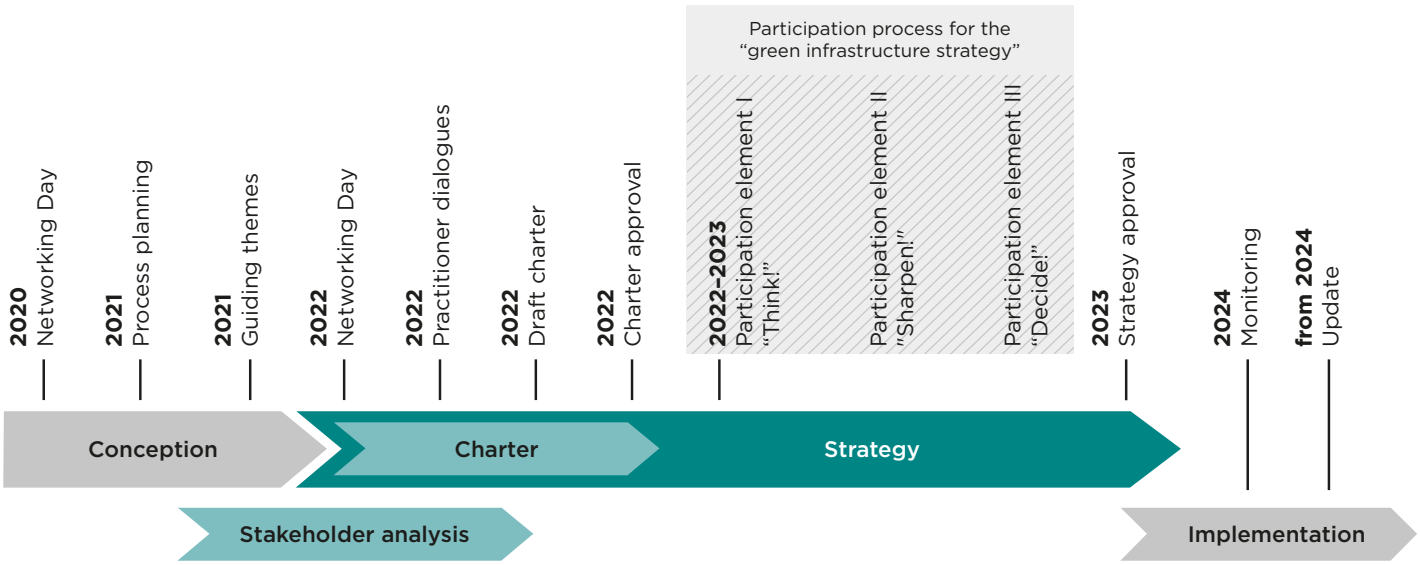
Putting guiding themes and goals into practice together!

This charter covers the guiding themes and main goals of the green infrastructure in the Ruhr metropolis. These will be broadened over time and evolve into specific quantitative and qualitative objectives. When the charter has been adopted, the "Green Infrastructure Strategy" will be drawn up. Similar to the charter, the strategy will discuss the opinions and approaches of a wide range of stakeholders. There will be a more in-depth discussion about green infrastructure and its spatial manifestation in the Ruhr metropolis and how we can support the agreed goals with specific target figures. At the end of this process, the stakeholders will have agreed on concrete goals and measures that can be implemented.

In order to live up to the aspiration of the green infrastructure strategy "From the region – for the region", it will also be necessary to jointly develop an idea of what the cooperation models and structures will look like in the future. The aim is for institutions, municipalities, associations, clubs, initiatives, citizens, NGOs, volunteers, administration, planning, education, science, business, practitioners, media, industry, politics and many other stakeholders to work together even more closely in order to make our Ruhr metropolis the greenest industrial region.

The RVR will continue to actively promote these processes and provide a platform for exchange and knowledge transfer.

Let's take this journey together!



Guiding themes and goals of green infrastructure in the Ruhr metropolis

I. Liveable Ruhr metropolis
Protecting quality of life and creating an identity through green infrastructure

- Safeguarding and developing the open space system and its various functions
- Improving quality of life through everyday green space in the districts
- Expanding the open space system by enhancing grey areas with greening potential
- Enhancing the identity-forming character of open space

II. Climate-adapted Ruhr metropolis
Ensuring resilience and climate comfort through green infrastructure

- Developing the Ruhr metropolis into a sponge region
- Increasing heat prevention and climate comfort in cities
- Improving flood and inundation prevention
- Maintaining a resilient, vital green infrastructure

III. Biodiverse Ruhr metropolis
Enabling cohabitation and greater biodiversity through green infrastructure

- Protecting and developing refuges, strengthening the biotope network
- Daring more wilderness in the urban green space
- Turning cultural landscapes into strong habitats
- Strengthening nature experience and environmental education

IV. Climate-just Ruhr metropolis
Strengthening environmental justice through green infrastructure

- Promoting health and well-being
- Accelerating triple internal development
- Promoting natural climate protection through the expansion of carbon sinks
- Enhancing the attractiveness of mobility areas

V. Circular Ruhr metropolis
Understanding the region as a system and using green infrastructure to promote sustainable and regional added value

- Strengthening green infrastructure as a location factor for business and tourism
- Promoting productive properties of green infrastructure for sustainable resource use
- Developing green infrastructure as an impetus for sustainable and circular building culture
- Actively protecting and caring for the soil

Principles of green infrastructure for the Ruhr metropolis

The term “green infrastructure” not only refers to the physical green elements, such as urban trees or regional parks, but also to the planning approach that underlies the development of green infrastructure. This approach is characterised by the following planning principles, which are adhered to in the implementation of all objectives:

Connectivity and multi-spatiality
developing green infrastructure as an interconnected system

Integration
merging green and grey infrastructure

Multifunctionality
promoting multiple functions

Cooperation
encouraging cooperation and alliances

Publication information

PUBLISHED BY

Regionalverband Ruhr
Kronprinzenstraße 35
45128 Essen
+49 201 2069-0
info@rvr.ruhr

Department of Environment
and Green Infrastructure
Nina Frense

EDITING

Dr Hanna Schmitt
Tino Wenning
Alina Gladen
Laura Bellenberg

neues handeln AG
Kommunikation für
gesellschaftliche Themen
Lindenstraße 20
50674 Cologne
+49 221 16082-0
koeln@neueshandeln.de

Corinna Hess
David Denne
Jo Kurzner
Nico Hoffmeister

bgmr Landschaftsarchitekten GmbH
Prager Platz 6
10779 Berlin
+49 (0)30 2145959-0
buero@bgmr.de

Dr Carlo W. Becker
Katharina Lindschulte
Sven Fassbender
Prof. Undine Giseke

The green infrastructure charter Ruhr metropolis is funded by the Münster district government with funds from the Ministry of Environment, Agriculture, Nature and Consumer Protection of the state of North Rhine-Westphalia.

PICTURE CREDITS

RTG/Dennis Stratmann (Title)
RVR/Ruhr Grün (pp. 2/3)
RVR/Thomas Wolf (p. 4)
RTG/Johannes Kassenberg (p. 6)
RVR/Claudia Dreyße (p. 7)
RVR/Beck (p. 9)
RVR/Hans Blossey (p. 11)
RVR/Ziese (p. 17)
RVR/Josef Bieker (p. 18)
RTG/Johannes Kassenberg (p. 21)
Adobe Stock/P.S.DES!GN (p. 22)
Adobe Stock/barmalini (p. 25)
RTG/Dennis Stratmann (p. 26)
radrevier.ruhr/Ruhrgepixel (p. 29)
RVR/Claudia Dreyße (p. 30)
Adobe Stock/dimedrol68 (p. 33)
RVR (p. 34)
RTG/Dennis Stratmann (p. 36)

Last updated: September 2022

www.grueneinfrastruktur.rvr.ruhr

REGIONALVERBAND RUHR