The Nature Conservancy Europe

Climate Adaptation Plan Southern Mierendorff Island

Abstract

Commissioned by

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CONTENT

1 CLIMATE ADAPTATION ON SOUTHERN MIERENDORFF ISLAND

1.1 THE NEED FOR ACTION

Climate change is advancing: 2018, 2019, and 2020 are among the warmest years since measurements began in 1908 (see Becker / Schmidt, 2022:9) . This trend continues in 2023, which has been declared the warmest year in 125,000 years by the EU climate change service Copernicus Climate Change Service (C3S) (see Copernicus EU, 2023). Nevertheless, the stated years would be considered rather cool at the end of the 21st century.

The continuous rise in temperature particularly affects cities that suffer from the urban heat-island effect and are up to five degrees warmer than their surrounding areas. Berlin is among those cities in Germany most at risk from climate change (see AFOK, 2016: 12). In response, the city declared a climate emergency in December 2019, setting an ambitious goal to reduce CO2 equivalents by more than 85% by 2050 compared to 1990 levels (see Senatsverwaltung für Stadtentwicklung und Umwelt 2014: 26) . However, different built-up areas experience varying levels of impact. Dense inner-city districts, such as Mierendorff Island, are already heavily affected. These neighborhoods can expect increased heat stress, dry periods, and more frequent extreme weather events in the coming years. Additionally, the Southern Mierendorff Island lacks green and open spaces (see Becker/ Schmidt, 2022: 48) . The urban fabric presents further challenges: large, paved commercial and industrial areas are adjacent to dense perimeter block developments with a high level of imperviousness and population density. There is also significant construction activity. New construction projects are continuously altering land use. Given the ongoing changes in urban structure and the escalating challenges posed by climate change, adaptation measures are urgently needed to ensure attractive and healthy living conditions. Consequently, the district office of Charlottenburg-Wilmersdorf and The Nature Conservancy jointly commissioned a local climate adaptation plan for the Southern Mierendorff Island in Berlin in 2023.

1.2 BROAD COLLABORATION IN THE DEVELOPMENT PROCESS

The development of the climate adaptation plan for the Southern Mierendorff Island involved extensive participation from relevant stakeholders and the public. At the beginning of the development process, alongside reviewing existing plans and digital data sources, input was sought from stakeholders already active in the area, and existing local grassroots initiatives were analyzed. In addition, interviews were conducted with key stakeholders and community groups (including Vattenfall AG, the INSEL-Zukunftsteam, DorfwerkStadt e.V., degewo AG) to integrate their perspectives and experiences and to inform the development of the plan. Focused discussions were also held with district agencies and authorities relevant to the topics. The DorfwerkStadt e.V. local initiative was particularly actively involved in the process, using its communication channels to help disseminate information and event announcements. The public was engaged through a variety of event formats, leading to a high level of participation. Regular interagency meetings accompanied the process to ensure its transparency and early administrative buyin. Interdepartmental collaboration increased the willingness to take responsibility and helped to better assess the feasibility of planned actions.

A final public presentation in November 2023, bringing together the district administration, political representatives, stakeholders, and the public, served to discuss and encourage ongoing participation in implementing the climate adaptation plan.

Fig. 1
INSEL neighborhood festival, collecting proposals for measures (STATTBAU)

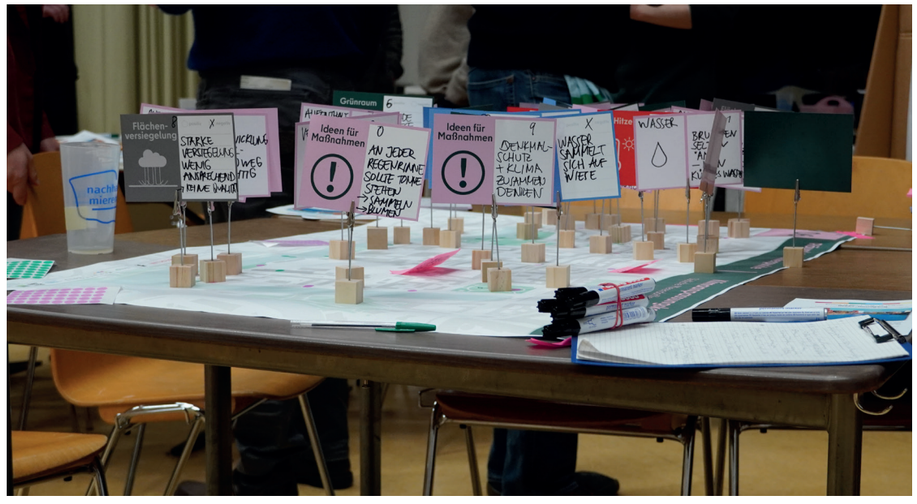


Fig. 2
INSEL conference, collected notes (plan zwei)

[1] Carlo Becker and Marie Schmidt (2022): Bezirkliches Konzept zur Anpassung an die Folgen des Klimawandels in Charlottenburg-Wilmersdorf.

[2] AFOK (2016): Anpassung an die Folgen des Klimawandels in Berlin - AFOK. part 1 main report.

[3] Senatsverwaltung für Stadtentwicklung und Umwelt (ed.) (2014): Machbarkeitsstudie Klimaneutrales Berlin

[4] See footnote 1.

2 CLIMATE CHANGE HITS SOUTHERN MIERENDORFF ISLAND

2.1 THE CURRENT SITUATION IN THE NEIGHBORHOOD

Southern Mierendorff Island is located in the Charlottenburg-Wilmersdorf district in the west of Berlin and forms part of the Mierendorff Island. Bordered by the River Spree to the southwest and the Westhafen Canal to the northeast, this urban neighborhood covers approx. 58 hectares and stretches from the Spree to Kaiserin-Augusta-Allee. It is a mixed-use, inner-city area characterized by dense development, primarily in the form of closed perimeter block developments. South of Quedlinburger Straße, large commercial areas, including the Vattenfall power plant, dominate the landscape. The district also includes public green spaces such as Mierendorff Square, Goslarer Square, and Österreichpark. As of December 2022, around 6,113 people reside in the neighborhood, but this number is expected to rise due to numerous new construction projects converting commercial areas into residential developments. In addition, the proportion of disadvantaged groups, including refugees, is rising. Refugees, along with the elderly and children, are particularly vulnerable to the consequences of climate change. The growing population is putting more pressure on existing green spaces and parks.

Fig. 3
Location of Southern Mierendorff Island in Berlin (plan zwei)

Fig. 4
Road with trees and shading (plan zwei)

Fig. 5
View of the sun-exposed Mierendorff Square (plan zwei)

Fig. 6
Urban garden in front of the Jugendkunstschule (youth art school) (plan zwei)

Fig. 7
Construction work on the banks of the Spree (plan zwei)

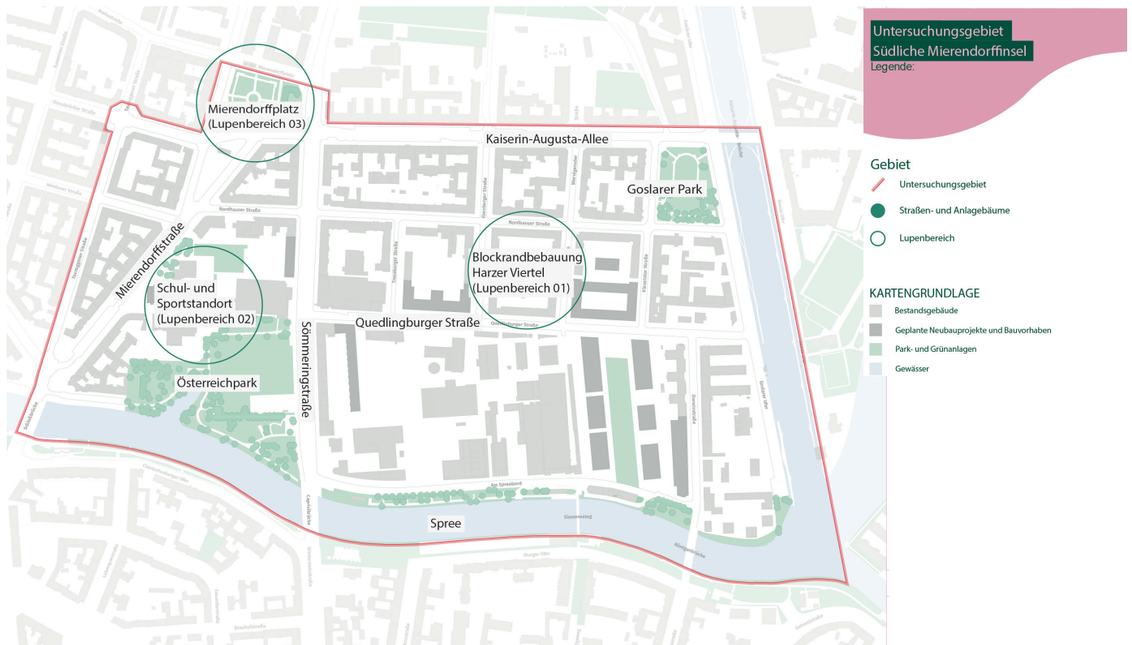


Fig. 8
Southern Mierendorff Island study area in Berlin (plan zwei)

2.2 CLIMATIC CHANGES ARE ALREADY VISIBLE

On Southern Mierendorff Island, the temperature has risen by around 2°C since meteorological records began (comparing the average from 1991-2020 to that from 1881-1910). In the future, further increases in mean annual temperatures are expected, along with more hot days (Tmax >25°C), extreme heat days (Tmax >30°C), and hot nights (Tmin >20°C), as well as longer heat wavesFrosty and icy days, on the other hand, will become less frequent, resulting in milder winters. Although there is a slight long-term upward trend in annual precipitation, it is not significant. Seasonal shifts, however, are becoming more important: summer precipitation may decrease, resulting in drier summers, while winter and spring precipitation may increase, resulting in wetter winters. At the same time, the frequency of days with precipitation is expected to decline, while heavy rainfall events, potentially causing personal and property damage, are expected to increase. The climate risk analysis indicates that different types of vulnerability—population and social infrastructure, buildings and transport, open and green spaces, stormwater, biodiversity and the environment—are affected to varying degrees, but all are expected to be at significant risk.

Nighttime temperatures

The study of the ground-level temperature field identifies bioclimatic stresses and hot spots in urban areas based on temperatures measured on a typical summer night. Nighttime air temperatures vary considerably. For example, the nighttime ground-level air temperature ranges from a minimum of approx. 17.6°C above the Charlottenburg Palace Gardens to just over 24°C in highly paved areas—a span of more than 6°C. The average temperature in the study area under the assumed meteorological conditions is 21.8°C. The extent of the temperature deviation in the built-up area primarily depends on the city's size and building density. Due to the homogeneous development pattern on Southern Mierendorff Island, the temperature amplitude is lower than in mixed-use areas, such as those found on the city's outskirts. The lowest nighttime air temperatures in urban locations are found in heavily greened courtyard areas. In green and open spaces with dense tree cover, the canopy reduces nighttime radiation and thus surface cooling (as seen in Österreichpark). Conversely, bodies of water can increase nighttime temperatures, as their high heat storage capacity means they cool down less and release heat into the surroundings (as in the case of the River Spree).

Daytime thermal load

Meteorological parameters do not affect human wellbeing in isolation, but through complex interactions that can be assessed using an index such as Physiological Equivalent Temperature (PET). PET provides a quantitative assessment of thermal stress and is often used as a standard indicator for comparing outdoor thermal stress. In the study area, well-shaded courtyards and rows of trees have lower PET values of 23-29°C during the day, increasing their amenity value. In contrast, paved and sun-exposed areas, such as the parking lot on Sömmeringstraße, show extreme PET values of over 41°C, indicating a high thermal load. Water bodies such as the River Spree help to cool their surroundings. In addition, green spaces with a high proportion of trees, such as the Österreichpark, offer residents valuable retreats with lower heat loads during the day.

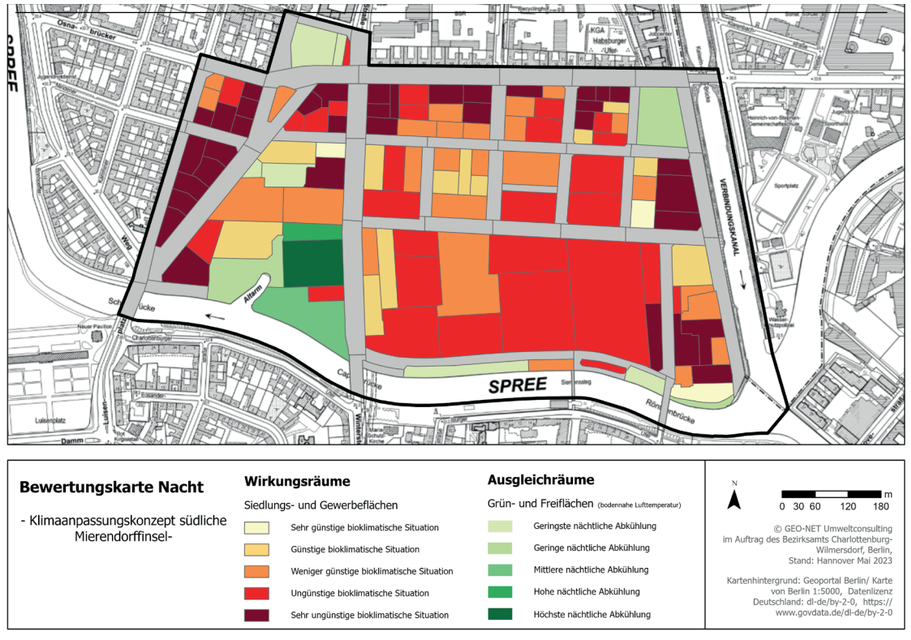


Fig. 9
Nighttime evaluation map for Southern Mierendorff Island (GEO-NET)

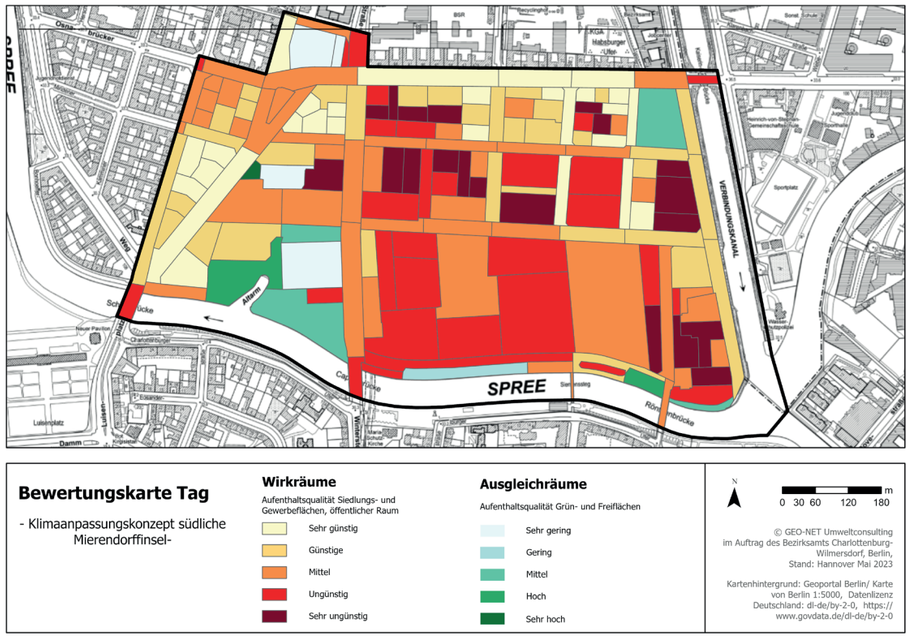


Fig. 10
Daytime evaluation map for Southern Mierendorff Island (GEO-NET)

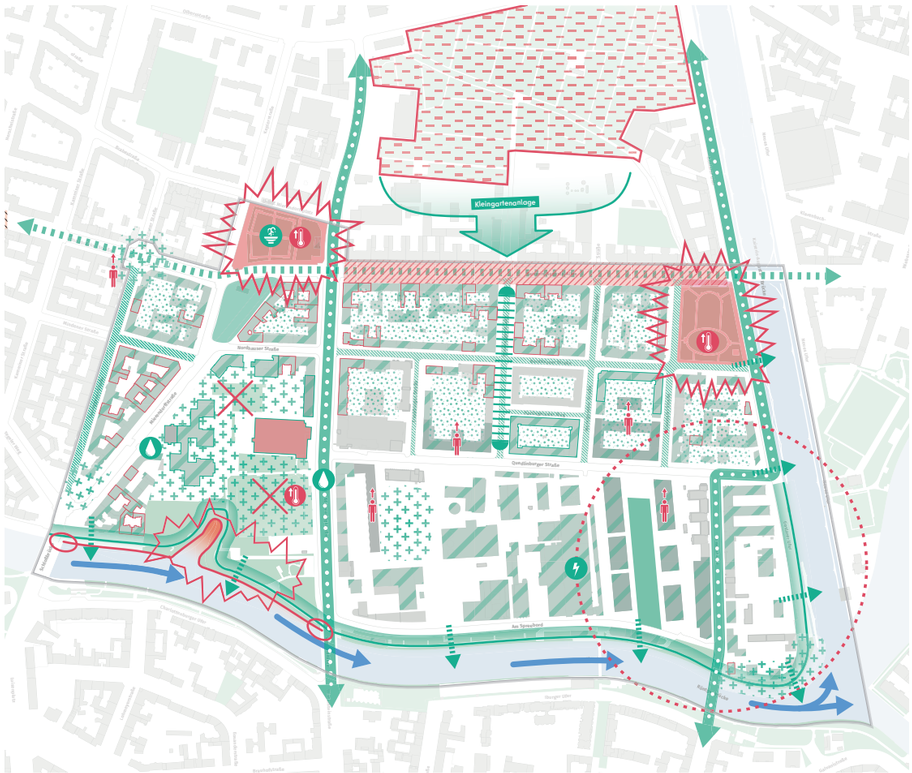
2.3 HOT SPOTS

The analysis identifies hot spots primarily as areas with the highest thermal loads. The analysis also takes into account sensitive criteria such as high population density, old buildings with potentially high indoor thermal loads, vulnerable infrastructure, and lack of major relief areas. In addition, climate simulation calculations identified street segments, squares, and courtyards that are exposed to increased thermal loads at certain times of the day or night.

Some areas experience excessive heat only during the day or at night. However, many subareas experience heat stress both day and night. These include Mierendorff Square, the school and sports complex, the area around Ilsenburger Straße, and the apartment blocks at the corner of Kaiserin-Augusta-Allee and Sömmeringstraße, as well as those between Nordhauser Straße and Quedlinburger Straße. At night, almost all of the apartment blocks experience multiple heat loads.

In particular, the three public parks and green spaces — Mierendorff Square, Goslarer Square and Österreichpark — are facing challenges. Here, the amenity value is particularly endangered by climate change and increasing use pressure, which may lead to overuse of public green spaces. In addition, the avenue of trees on Kaiserin-Augusta-Allee is threatened by the construction of the new M10 tram line. The need for action is particularly acute in areas where the sensitivity of urban space and population to extreme weather events is exceptionally high.

The analysis also identified specific opportunities for climate adaptation, including recommendations to designate areas for pavement removal, to create interconnected public green spaces, and to green buildings.



OPPORTUNITIES

- Climate adapted conversion of public spaces
- Urban spaces with potential for greening and traffic calming
- Roof areas with potential for green roofs
- Rainwater infiltration possible
- Municipal properties with potential for action
- Potential areas for new green and open spaces
- Depave interior courtyards
- Convert roadbeds to add bicycle priority zones
- Expand connections to water
- Combine climate-adapted conversion of Kaiserin-Augusta-Allee with the construction of M10 tram extension
- Cool neighborhood temperatures by maintaining Spree's fresh air corridors
- Illsenburger Street profile enables bioswales
- Connect to biotopes via nearby allotment gardens
- INSEL-trail provides high quality of stay and experience of River Spree
- Drinking fountains for heat waves
- Tap into existing stormwater channels
- Use local electricity production

CHALLENGES

- Monument protection prevents comprehensive climate adaptation
- Demolition of the tree-lined avenue due to the construction of the new M10 tram line
- Housing demand could lead to paving of open spaces
- Heterogeneous property ownership reduces influence
- Stormwater overflows degrade local water quality
- Area with inadequate public transport provision in the future
- Closed open spaces prevent green space connectivity
- Growing demand strains public open spaces
- Population growth leads to higher demand for open spaces
- Increasing conflicts in the use of water and riverbanks
- Climate change reduces the quality of open spaces

Fig. 11
Opportunities and challenges on Southern Mierendorff Island (plan zwei)

3 RETHINKING THE ISLAND CLIMATE!

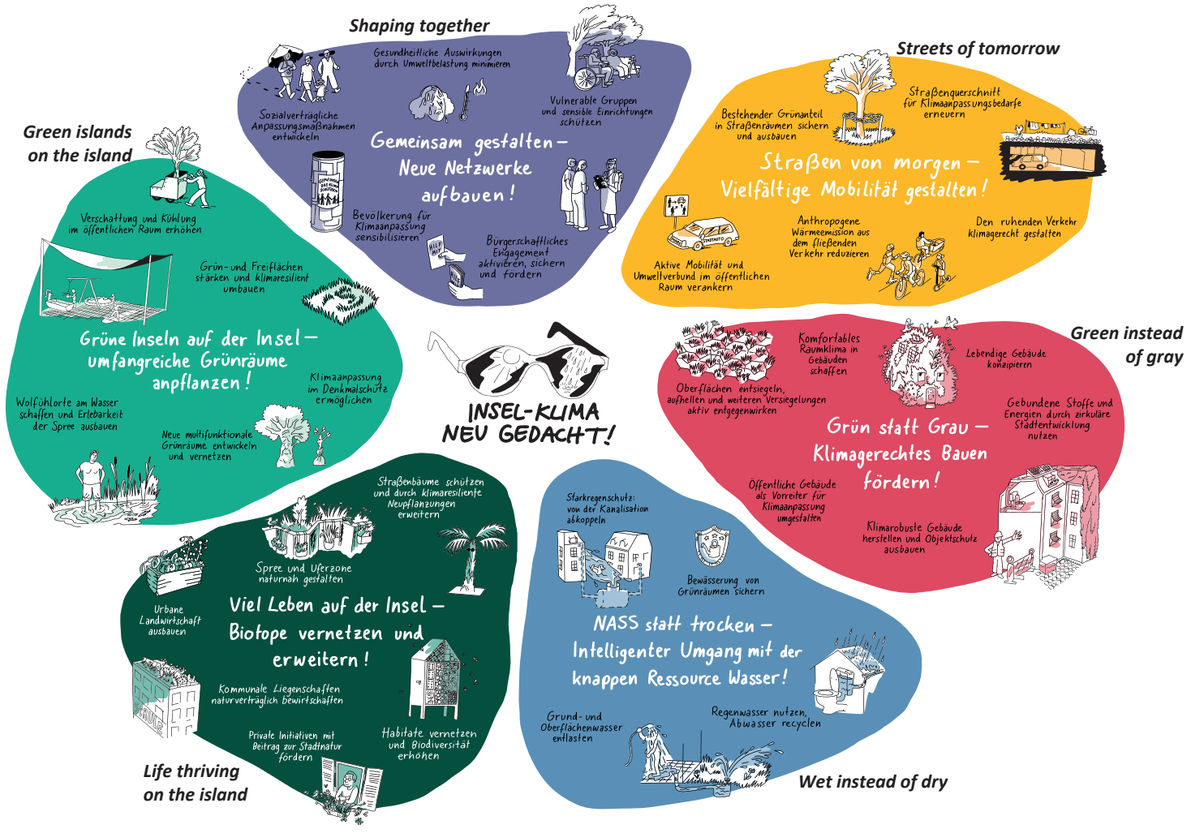
3.1 SHAPING TOMORROW: A VISION WITH ACTIONABLE GOALS

The resulting guiding principle addresses the main risks identified in the climate risk analysis and sets goals for implementing measures. “Rethinking the Island Climate!” represents a pioneering approach to the urban development of Southern Mierendorff Island, proactively tackling climate change challenges. The slogan serves not only as a call to action, but also as a plea for innovative solutions in sustainable development. Rather than just overcoming the challenges posed by climate change, the aim is to transform them into opportunities for progressive urban growth. Heat islands, for example, can be converted into comfortable thermal zones with low loads and a high amenity value.

The guiding principle’s overarching goals are: “Shaping together - Building new networks,” “Streets of tomorrow - Designing diverse mobility,” “Green instead of gray - Promoting climate-friendly construction,” “Wet instead of dry - Using water wisely,” “Life thriving on the island - Connecting and expanding biotopes,” “Green islands on the island - Creating extensive green spaces.” Some of these goals are supplemented by specific targets, such as raising the proportion of green spaces, increasing the greening of buildings (both roofs and facades), and providing more street trees. These quantitative targets serve as a basis for decision-making by municipal stakeholders and can be used to measure progress and prevent undesirable developments.

Transferring the knowledge and ideas gained “from the island to the city,” this model can also assist other districts facing similar climate change challenges.

Fig. 12
Graphic rendition of the guiding principle “Rethinking the Island Climate!”
(© Jolanda Obleser)



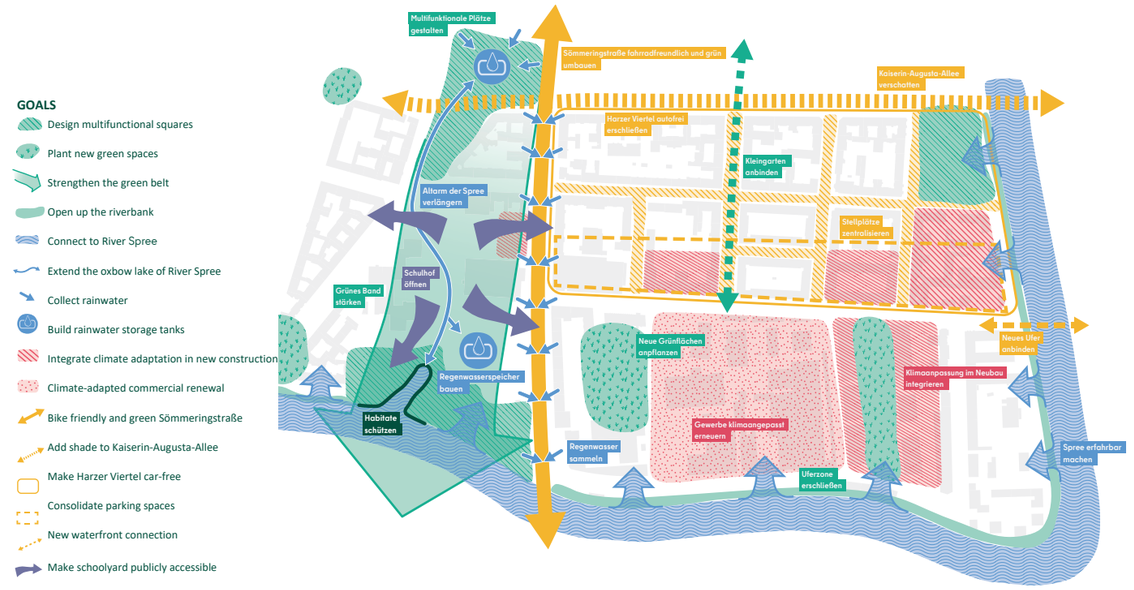


Fig. 13
Map of recommendations (plan zwei)

3.2 66 RECOMMENDED STRATEGIES IN THE NEIGHBORHOOD

The catalog of recommended strategies for Southern Mierendorff Island comprises 66 specific actions to implement “Rethinking the Island Climate!” This catalog serves as an integrated toolbox and is a key component of the holistic climate adaptation strategy. For each field of action, three particularly effective measures have been selected and described in detail. These key measures include, for example, the depaving and greening of courtyards or the development of urban planning concepts or landscape plans as a basis for site-specific climate adaptation in new construction projects. Fact sheets categorize these strategies according to the fields of action identified in the SWOT analysis (Analysis of strengths, weakness, opportunities, and threats) and provide details on cost-effectiveness, implementation period, relevant stakeholders, and target groups. They also outline the objectives, potential effects, obstacles, and next steps for each strategy.

Development of green statutes and checklist of property-related climate adaptation standards for new construction projects — 37

Field of action: Buildings and urban structure

Goal	1.1, 1.3, 2.1, 2.3, 2.4, 3.1, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 5.3, 5.5, 6.2, 6.3
Climate risks	D1, D2, D3, F4, F5, F6, F7
Target group	Project developers, property owners
Priority	High
Cost estimate	<100.000€
Financing	Municipal funds
Implementation period	Short term
Actors	Urban planning office, roads and green spaces office, landscape planning office

Brief description

A legally binding checklist is to be developed. Similar approaches already exist with the Berlin Biotope Area Factor (BFF) or the Swedish "Green Points". These strategies guarantee the implementation of urban ecological projects on the basis of a list of measures. Investors are obliged by urban development contracts to implement a minimum number of measures. The BFF also shows what contribution a measure makes to urban nature. Depending on its scope, the measure is multiplied by a factor and a minimum value is set that all construction projects must achieve. The storage and use of rainwater and grey water, the greening of roof and façade areas, low soil sealing, biodiversity and social qualities should be taken into account.

A first step could be the adoption of an additional development plan as a green statute (as in Karlsruhe, for example). The "green statute" is created as an additional development plan in addition to the existing development plans and overlays them. The regulations contained therein also apply to areas in which no separate development plans exist. This establishes minimum standards for greening measures. In the polluted inner city area of the southern Mierendorffinsel, the statutes are intended to support the protection, development and expansion of green structures. The climate adaptation concept serves as the basis for the development plan.

Possible effects / savings potential

- Binding requirement for climate adaptation for new construction projects
- Reducing sealing in new construction projects and ensuring minimum climate adaptation standards
- Improving the quality of stay
- Early counteracting of heat stress and water retention during heavy rainfall

Assessment of feasibility / risks and obstacles

- Climate effectiveness of measures must also be considered
- Long-term maintenance and implementation must be reviewed
- Similar to the biotope area factor already used in Berlin
- Possible restrictions under building law and property law

Next steps

1. Initiate exchange of experience with Malmö or Karlsruhe
2. Checking the integration of green spaces on the Mierendorffinsel under building law
3. Commission a planning office to develop the indicators and evaluation scheme

Fig. 14
Sample fact sheet of a key strategy from the “Green instead of gray” field of action (plan zwei)

Sömmeringstrasse retention boulevard — 21

Field of action: Transport infrastructure

Goal	1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.5, 4.2, 5.1, 5.3, 5.4, 6.1, 6.2
Climate risks	A1, A2, B1, B2, D1, F1, F3, F4, F5, F6, F7
Target group	Residents and EB seekers
Priority	High
Cost estimate	>1.000.000€
Financing	Charlottenburg-Wilmersdorf district, subsidies
Implementation period	Long-term
Actors	Roads and green spaces department, urban planning department, civil engineering department, rainwater agency, landscape architecture office, traffic planning office

Brief description

Sömmeringstraße offers great potential for a climate-adapted redesign due to its wide street cross-section of approx. 36 m. The central intervention in the road structure concerns the central reservation, which is no longer to be used for stationary traffic. This area will be converted into a retention area, which will serve as a measure to protect against heavy rainfall.

The central island will be unsealed and transformed into a near-natural depression with grasses and small shrubs. The area acts as a collection basin for rainwater, which is collected during low rainfall and slowly evaporates on dry days. This helps to cool the surrounding air. In the event of heavy rainfall and flooding, the retention area can serve as an overflow area. This relieves the sewer system and prevents overflows into the Spree. In this way, the retention boulevard helps to improve water quality.

As trees can only be planted selectively due to possible waterlogging and the high level of pollution from road traffic, structural shade elements will be erected in some places to enrich the space for people to stay on hot days. The area also provides a habitat for small animals and connects the allotment garden site in the north with the Spree.

Possible effects / savings potential

- Minimize heat emissions through less parking search traffic and unsealing
- Reduction of sewer overflows during heavy rainfall
- Protecting the water quality of the Spree and connecting canal
- Environmental education through visible rainwater collection

Assessment of feasibility / risks and obstacles

- Redesign of the road space with regard to bicycle traffic planned, at the same time the conversion of the central road can take place
- Dependent on the provision of a neighborhood garage for residents in existing and new buildings

Next steps

1. Incorporating the Sömmeringstraße retention boulevard concept into the road planning for cycle paths
2. Conversion of the parking space system in the district to neighborhood garages
3. Detailed planning of the conversion by engineers

Fig. 15
Sample fact sheet of a key strategy from the “Streets of tomorrow” field of action (plan zwei)

4 ON-SITE STRATEGIES AND THEIR EFFECTIVENESS

4.1 IN-DEPTH LOOK AT FOCUS AREAS

To test the transferability and suitability of the recommended strategies, they are applied in selected focus areas. These focus areas within the study zone serve to put the proposed strategies into practice. This demonstrates how different types of urban infrastructure can be adapted to climate change with the proposed strategies while highlighting qualitatively new features that can emerge as a result. The three focus areas were chosed based on the climate and SWOT analysis (e.g. high added value for a large number of users, particularly vulnerable group of people) in conjunction with the fact sheets on the recommended strategies. The focus areas are characterized by high climatic impact and significant development potential.

These three focus areas were selected:

- Perimeter block development in the Harzer-Viertel (Focus Area 1)
- School and sports facility (Focus Area 2)
- Public green and open space at Mierendorff Square (Focus Area 3)

After outlining the baseline situation and the proposed measures for each focus area, a comprehensive simulation of the proposed heat adaptation strategies is performed using a numerical climate model. The aim of this analysis is to evaluate the effectiveness of the proposed measures compared to the current situation.

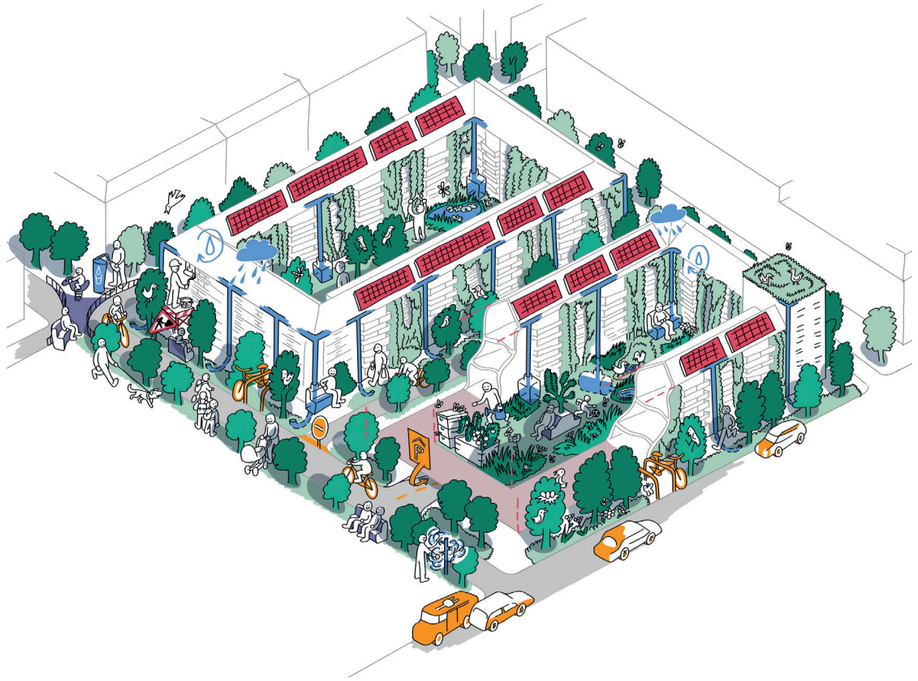


Fig. 16
Focus Area 1, isometric drawing of proposed strategies for the perimeter block development in the Harzer-Viertel (©Jolanda Obleser)

4.2 A BREATH OF FRESH AIR IN THE HARZER-VIERTEL

Initial situation: The Harzer-Viertel is characterized by two perimeter block developments with different degrees of greening. The northern courtyard is cooler (26-29°C PET) due to dense vegetation, while the heavily paved southern courtyard experiences extreme heat loads exceeding 44°C PET. Surrounding streets, such as Ilsenburger Straße, also suffer from high temperatures due to the lack of green space and extensive paving. Densely populated areas far from cooling green spaces are particularly affected.

Measures: A traffic-calmed neighborhood zone is at the heart of a possible unsealing and greening of the Harzer-Viertel. By relocating parking spaces to underground garages, space can be created for pavement removal and greening. The Ilsenburger Straße could be transformed into a green street with tree pits, flower beds, and playgrounds. Green facades and courtyards, along with the use of rainwater for irrigation, will contribute to cooling and sustainable water management. Rooftop photovoltaics and urban gardens will further enhance these strategies.

Effectiveness: The proposed strategies in the Harzer-Viertel, such as depaving, greening, and shading, reduce the thermal load in courtyards and improve the microclimate. Notably, the green roof and the greened streets, such as Harlingeroder Weg, show a significant heat reduction. Additional trees along Ilsenburger Straße likewise contribute to a more pleasant local climate. The measures help mitigate nighttime overheating, resulting in a noticeable cooling effect.

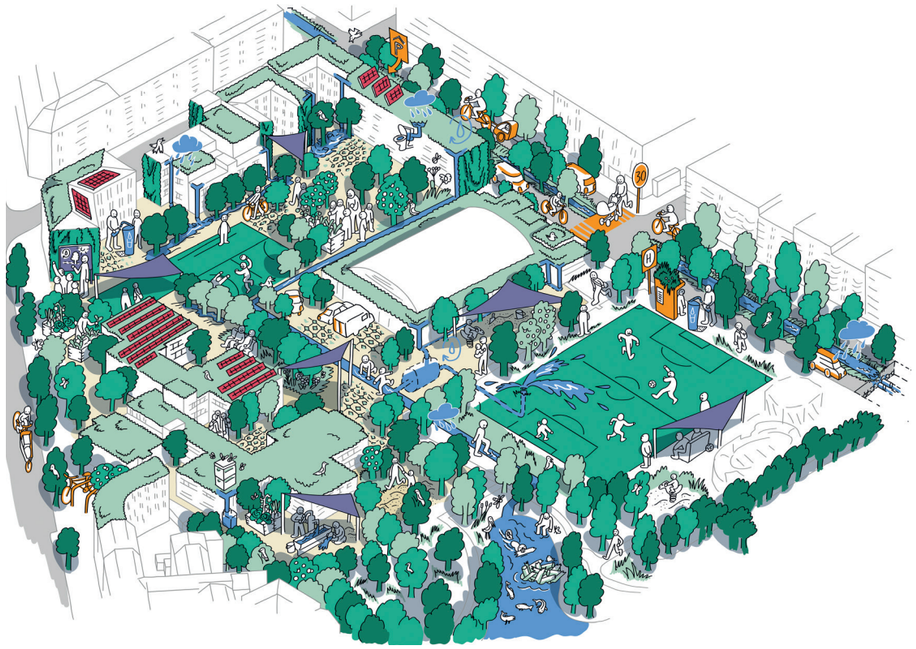


Fig. 17
Focus Area 2, isometric drawing of proposed strategies for the school and sports location (©Jolanda Obleser)

4.3 GREEN LUNGS: MIERENDORFF ELEMENTARY SCHOOL AND SÖMMERINGHALLE

Initial situation: Focus area 2 includes the Mierendorff elementary school and the historic Sömmeringhalle. Large paved areas, such as the schoolyard and sports field, become excessively hot in summer,reaching up to 38°C PET without shade. Sömmeringstraße can reach temperatures of up to 41°C PET.

Measures: The redesign of the schoolyard includes depaving, greening, the creation of school gardens, open-air classrooms, and water playgrounds. These measures aim to create a green link between Mierendorff Square and Österreichpark. Integrated stormwater management using cisterns and infiltration swales will improve the microclimate, while graywater recycling and heat recovery are recommended for new buildings. In addition, rainwater can be used to irrigate the sports field instead of being discharged untreated into the River Spree. Another strategy recommends redesigning the median of Sömmeringstraße to improve the microclimate in the long term and promote cycling. Proposed climate adaptation measures also include green bus stops with drinking fountains and the reduction of parking spaces.

Effectiveness: The strategies to unpave and green the schoolyard, along with the reduction of parking spaces, significantly decrease the thermal load on the school and sports site. The climate analysis indicates that providing shade through tree pits and awnings reduces heat load. Previously heat-exposed areas now experience lower thermal loads. The playground and Sömmeringstraße benefit from increased greening and the conversion of parking spaces into infiltration swales. These changes will improve cooling during the day and at night, sustainably enhancing the microclimate of the surrounding area.

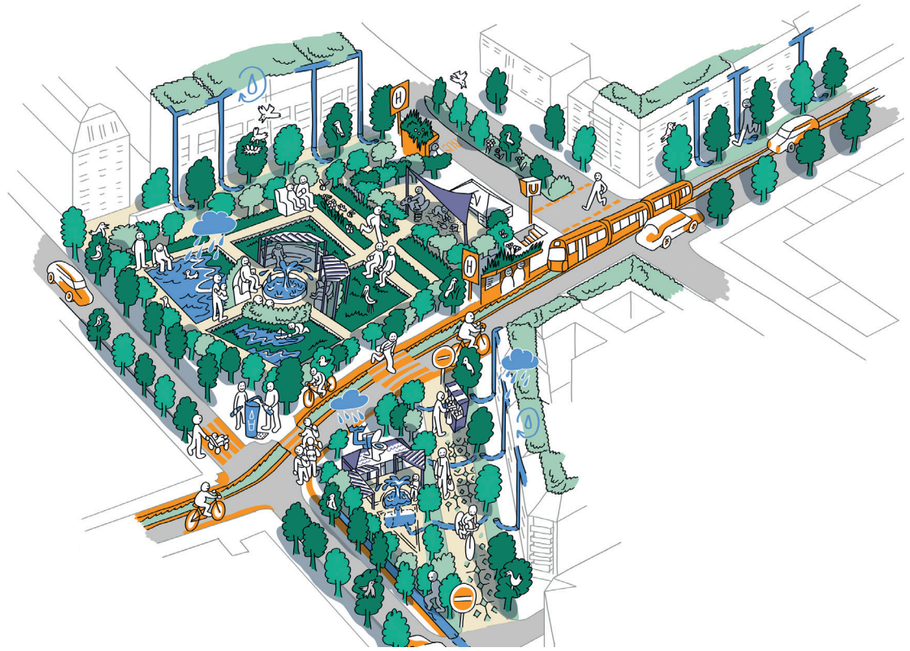


Fig. 18
Focus Area 3, isometric drawing of proposed strategies for the green and open space at Mierendorff Square (©Jolanda Obleser)

4.4 A PLACE IN THE SUN AT MIERENDORFF SQUARE

Initial situation: Mierendorff Square is a vital green open space in the neighborhood that plays a crucial role in climate regulation. Its special design significance is underscored by its status as a listed building. However, its preservation is increasingly threatened by rising heat and associated drought. On warm summer days, visitors seek the shade of the square‘s lush sycamore trees rather than linger on the sun-exposed lawns. The northern part of the square overheats during the day (up to 41°C PET, children‘s playground up to 44°C PET), while the southern part remains cooler at 26-29°C PET thanks to the trees. Osnabrücker Straße exacerbates the heat island effect by separating the two parts of the square, further increasing the heat exposure of visitors, especially vulnerable groups.

Measures: Proposals for the landmarked northern Mierendorff Square aim to combine historic preservation with climate adaptation. The lawn will be slightly lowered to collect rainwater and promote evaporative cooling. Temporary shade structures on benches and the playground will make it easier to enjoy the space on hot days. A crosswalk connecting the north and south plazas, a new row of trees, and a new strip of lawn will create a harmonious landscape. In addition, collected rainwater will be used for irrigation to reduce overheating and flooding.

Effectiveness: The strategies proposed for Mierendorff Square, such as pergolas, awnings, and additional vegetation, will significantly reduce the heat load on hot days, especially around the fountain and playground. This shade will noticeably improve the quality of the amenity. The paving and greening of Mierendorffstrasse and the addition of a grass strip will also reduce nighttime air temperatures, significantly reducing overheating compared to the current situation.

5 THE PATH TO IMPLEMENTATION

5.1 CONTINUING THE DIALOG

The communication strategy for the adaptation plan aims to raise awareness and engage various stakeholders in climate adaptation. During the public outreach process, it became clear that climate adaptation is a complex issue often difficult to communicate. However, public events such as the INSEL conference, creative workshops, and graphic illustrations proved to be effective in informing and involving citizens. Nevertheless, consolidating the concept is key to driving forward its implementation. A working group on climate adaptation has been set up and political support has been secured. The Charlottenburg-Wilmersdorf district office is committed to adopting the plan to ensure its backing by the administration, too.

5.2 MEASURING PROGRESS WITH DEFINED TARGETS

Effective monitoring is essential for the successful implementation of the climate adaptation plan. It systematically records and evaluates climatic changes, their impacts, and the progress of implementation. A key aspect is selecting relevant indicators and defining the data collection process. Indicators can be sourced from existing data sets, such as the Berlin Energy and Climate Protection Programme (diBEK) or the Deutscher Wetterdienst (DWD). In addition, specific response indicators should be determined for Mierendorff Island to assess the progress of adaptation measures. Integrating with existing monitoring systems, like the digital monitoring of diBEK, is useful. A monitoring plan will provide a structured approach to monitoring progress and identifying potential risks, enabling precise management of climatic changes and mitigation strategies. Long-term collection and evaluation of indicators require both financial and human resources. It is recommended to start with a small selection of indicators and gradually expand the monitoring plan.

The work on the adaptation plan does not end with the report; the report serves as a basis for future action. The proposed catalog of strategies lays the foundation for planning and projects, and is also a source of inspiration for other stakeholders.

5.3 A GLIMPSE INTO THE FUTURE

Implementing the climate adaptation plan for Southern Mierendorff Island requires close collaboration among various stakeholders, including relevant authorities, specialist departments, property owners, and local residents. To effectively carry out the strategies, the administration must allocate the necessary financial and staffing resources.

Following the “piggyback approach,” climate adaptation must be integrated into all renovation and conversion projects on Southern Mierendorff Island. Various existing means of funding should be used to finance the implementation of the measures.

In summary, we propose the following:

- Cooperation and coordination between different authorities and departments
- Resources/staff within authorities and departments, and in the field of climate adaptation
- Enhance the importance of climate adaptation in planning considerations and include it at an early stage
- Cooperation with local owners, institutions, and initiatives
- Involve residents before implementing measures
- Continue neighborhood involvement for short-term and small-scale measures and programs
- Fitting the measures into planned (conversion) construction projects (“piggyback strategy”)
- Integrated approach to the implementation of measures, efficient coordination of implementation (“no-regret strategy”)
- Controlling: regularly update and review quantitative climate adaptation targets
- Implement a mix of milestones and short-term measures
- Use funding, e.g. Berliner Programm für Nachhaltige Entwicklung (BENE II) and “Maßnahmen zur Anpassung an die Folgen des Klimawandels” (DAS) (Berlin Program for Sustainable Development).

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