

# EXPERIMENTATION PLANT.

Power plant Moabit: strategic re-use of a coal-fired power plant.  
The thermal power station as a new socio-ecological infrastructure.

Country / City ..Germany / Munich.....

University / School ..Technical University Munich / ..TUM School of Engineering and Design.....

Academic year ..Bachelor Thesis 2021.....

Title of the project ..Experimentation plant, A coal fired power plant as a new socio-ecological infrastructure.....

Authors ..Vincent Wenk.....

**TECHNICAL DOSSIER**

**Title of the project** Experimentation plant, a coal-fired power plant as a new socio-ecological infrastructure  
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**Title of the course** Bachelor Thesis  
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**University / School** Technical University Munich / TUM School of Engineering and Design



**Written statement, short description of the project in English, no more than 250 words**

The energy transition and the withdrawal from energy generation with hard coal and lignite raise the question how industrial infrastructures should be dealt with in the future.

Previous plans suggest energetic and cultural conversions or a complete dismantling of the sites.

For the Moabit power plant in Berlin Mitte, due to the complex and dense urban context and the resulting economical, ecological and social demands for the location, none of the approaches is sufficient on its own.

Instead of developing a fixed Masterplan, the project implements a strong open planning structure and multiple coded and flexible rooms that can react spatially and programmatically not only to today's, but also to future ecological and social challenges of the 21st century.

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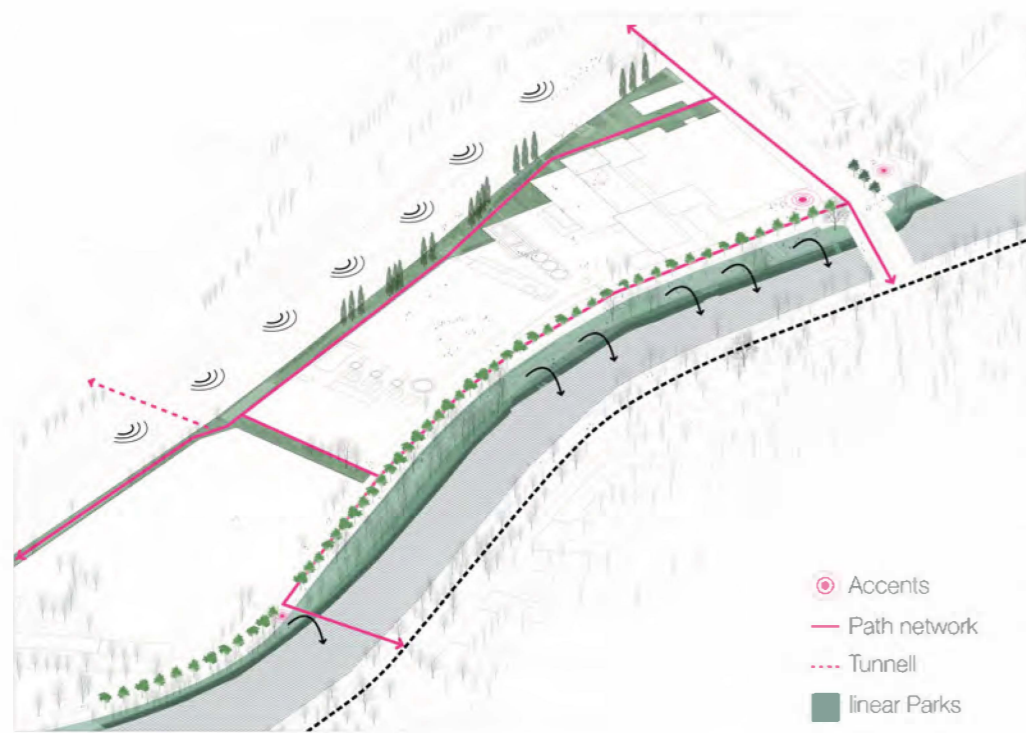
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**SCHOOL PRIZE**

### 1. From an island to a city-connecting blue-green infrastructure.



The design transforms the introverted industrial site into a generous public open space that links the separated districts of Moabit and Wedding. The area becomes part of the city-connecting Blue-Green Infrastructure. Two new park strips link the area with its surroundings. The Riverside Promenade becomes a new, representative connecting axis and makes the water of the shipping canal usable and accessible. In the south, the Track Park links the neighborhood with the Moabit district and shields from the noise of passing trains through its topography.

- ⊙ Accents
- Path network
- Tunnel
- linear Parks

### 2. From power generation to social production



As in the past, the CHP plant should continue to actively respond to the needs of the surrounding city and change in the future. Further experimentation is to take place there. For this purpose, the site will be divided into four subareas: The Tree Battery, the Playing Field, the Crafting Gates and the Workshop Halls. Each neighborhood can reshape itself in different ways and respond to different crisis situations.

- Tree Battery
- Playing Field
- Crafting Gates
- Workshop Halls

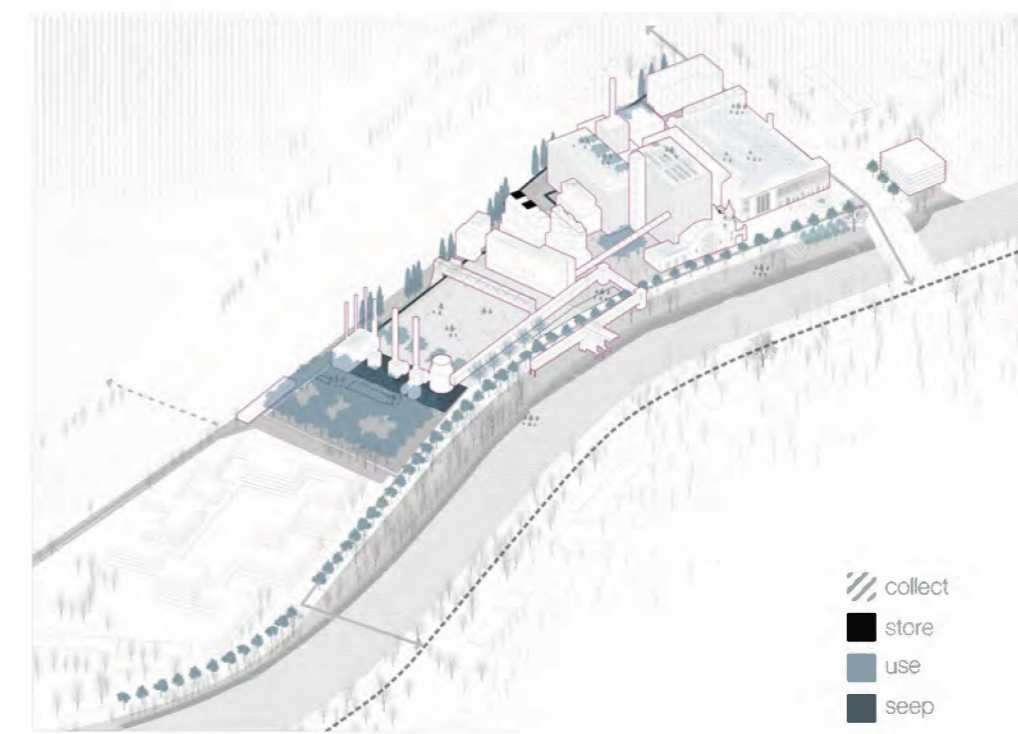
### 3. Reuse and reinterpret industrial structures



The industrial building structures form the basis for the new sub-quarters. The large open halls are filled with smaller, mobile buildings (block-in-block principle), other facilities are newly opened up by staircases or transformed into public open spaces. The material of the demolished buildings or walls will be reused as new surfacing around the playing field directly on site.

- reuse
- reinterpret
- inzine
- ⊞ tear down

### 4. From the coal phase-out to the sustainability phase-in

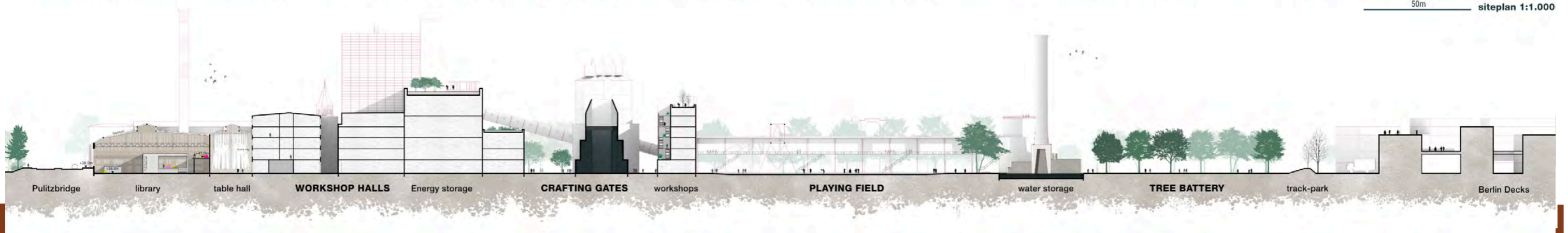


In the future, not only the chimneys of the coal-fired power plant are to be shut down. The area must adapt to the challenges of climate change and be sustainably designed and developed for the future. The area's degree of sealing will be reduced from 92 percent to 56 percent as a result of the new planning. A new stormwater management concept collects rooftop water during rain events, storing it in the former cooling towers. It can then either be treated and used in the buildings, or for irrigation and cooling of the area.

- /// collect
- store
- use
- seep



50m siteplan 1:1.000



Pulitzbridge library table hall WORKSHOP HALLS Energy storage CRAFTING GATES workshops PLAYING FIELD water storage TREE BATTERY track-park Berlin Decks



An Afternoon on the Playing Field



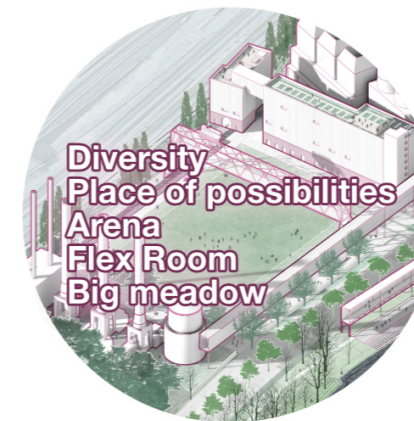
detail plan 1:200

## React to future challenges



### Climate crisis

The climate crisis represents one of the greatest threats to all of humanity today. Therefore, future climate changes must be considered in every new planning. Rising temperatures with ever new heat records and low precipitation up to drought periods make the W increasingly arid. By capturing and storing rainwater on roof surfaces, watering of the tree canopy can be extended even during dry periods. Tree species selection should also be better able to withstand climate changes. Species are increasingly coming from climatic zones where higher temperatures already prevail. Even if isolated species cannot withstand climate change, they can be replaced, but the entire tree population is never lost. This is also beneficial in the event of a species-related pest infestation. In addition, the forest contributes to cooling the environment through shaded areas, binds Co2 and provides a pleasant microclimate in the otherwise heated urban space.



### Health crises

Especially in the current pandemic, the issue of health in the life of each individual becomes an important asset that should be preserved. The outgoing restrictions have once again made us all aware that joint walks and meetings in the fresh air are an important social balance. The demand for open spaces, where people can meet in larger groups, is growing. At the same time, the need for quiet and protective nature is also growing. This is what the enclosed, densely vegetated forest can offer. Away from the pandemic, however, the most common diseases are so-called diseases of affluence, such as high blood pressure, heart failure, chronic lung disease and obesity. Prevention here can prevent many deaths and events such as heart attacks and strokes. One of the most important preventive measures is sport, or regular exercise. SpielFeld invites you to participate in both individual and group sports. Life in a big city offers many stress factors, two of which are noise and fine dust pollution from large roads. The large green area is shielded from the railroad tracks by the filled-up embankment and also from the opposite bank due to the traffic-calmed street and the adjoining canal. The area is also located in a fresh air corridor, so the site contributes to stress reduction via several influencing factors.



### Political crises

Our society is constantly evolving and diversification is also becoming increasingly important politically. Globalization leads to migration movements across countries and continents. A wide variety of cultures meet, especially in the melting pot that is Berlin. Social grievances such as sexism and racism are discussed in all social strata. It is important to create places where encounters and exchange are possible with the planning of the power plant area. For example, the district center is a space that can be shared and designed by all generations and cultures. The KreativGaragen feature workshops, swap meets and foodsharing initiatives that encourage people to live and experience neighborliness. A safe social environment increases resilience to future crises and can also solve individual problems collectively. The freely accessible roof terraces also invite activities such as gardening, playing and eating. They are intended to be a meeting place for all residents: inside the new apartments. Common rooms on each floor and spacious stairwells are also intended to create meeting spaces. Daily interaction promotes integration into a social fabric and can absorb and reduce social inequalities.



### Material crises

A steadily increasing consumption of land and resources calls for innovative and creative ideas and approaches to solutions. Today's consumer society is living at a level that is not sustainable in the long term due to climate change, among other things. Among other things, it is a matter of getting away from disposable products and following the principle of circular economy. Objects are to be maintained as closely as possible without consuming large amounts of material and energy and, in the best case, reused. Even if no reuse or repurposing can take place, as much of the product as possible should be fed into other cycles and not be lost. Here, for example, recycling points or repair hubs can be set up in the large halls through the flexible subunits. Broken appliances or items of clothing no longer go straight into the trash, but are given a second life and are used more sustainably. This also makes every day life more resource-efficient. But resources are also to be saved on a large scale. Although the block-in-a-block buildings have a basic structure, they can be converted and thus reused without much material expenditure. Other sports facilities, cafés, workshops, retail or co-working spaces, there are no limits to the users. Throughout the site, care is taken to use construction waste as material elsewhere, in order to avoid unnecessary transport to and from the site.