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Mauerpark Berlin – Investigating Design Language at Multiple Scales

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1. Abstract

The Mauerpark Berlin is a recently completed, contemporary park in Berlin (GER) designed by German landscape architect Gustav Lange (1937-2022) on the void of the former Death Strip of the Berlin Wall. Spatially, Lange preserved the openness of this urban void in the design concept while creating carefully placed design interventions throughout the park. Typically, Lange applies basic geometric shapes and ordering spatial compositions that are balanced with moments of randomness. This paper investigates the relationship of ordering design strategies with tactical, random moments in the design of Mauerpark Berlin. The method is a design analysis at three scales. The analysis investigates the overall composition of the whole park to smaller areas and further down to the scale of design objects and focal areas. Findings reveal that the design language applies a formal design vocabulary with principal geometric compositions and shapes and is balanced through variations and exceptions. This phenomenon is increasing gradually from the larger scales to the smaller design scales. From a more close-up perspective, geometries and lines are broken up to reveal gaps and thus increase diversity and intricacy in the design. These qualities seem to lead to moments of unpredictability, self-authored, spontaneous appropriation through users, unprogrammed and ever-changing activities through people or random distribution of pioneering, vagabonding plants. Overall, this study is relevant for those who are involved in the creation, restoration, or maintenance of larger parks in urban contexts that serve diverse users and audiences.

2. Introduction

Landscape architect Gustav Lange has been one of the most influential figures in the 1990's in Germany while publications and research on Lange are rare. "The spaces in between" (Lange 1996) contains three project essays written by Lange that reveal the importance of allowing for interstitial spaces as a key principle of his design philosophy. In these essays, Lange touches on other key elements and qualities such as the role of the poetics and ephemeral qualities. The article "Reflections on Garden Design" is published in the book "New Garden Design in Berlin" (2001) and is an example that provides insight about importance of the imaginary and randomness in his philosophy. The Mauerpark, Berlin (GER) that reconceived the former "Death Strip" along the Berlin Wall is covered in these reflections and it is the biggest (15 hectares/37 acres), most public and most recent design as he has designed the first phase 1992-1994 and authored the second phase (2010-2020). The Mauerpark reveals essence about Lange's design language considering the role of form and materials and about his personal position on the social and political role of public open space. In Lange's view, the void of the former "Death Strip" between two political systems had to become place of life.

The purpose of this paper is to gain knowledge on Lange's design philosophy and design language through an in-depth investigation of Mauerpark at different scales. More specifically, this paper investigates the role of basic principles of visual arts and geometry and how this affects aesthetics and perception.

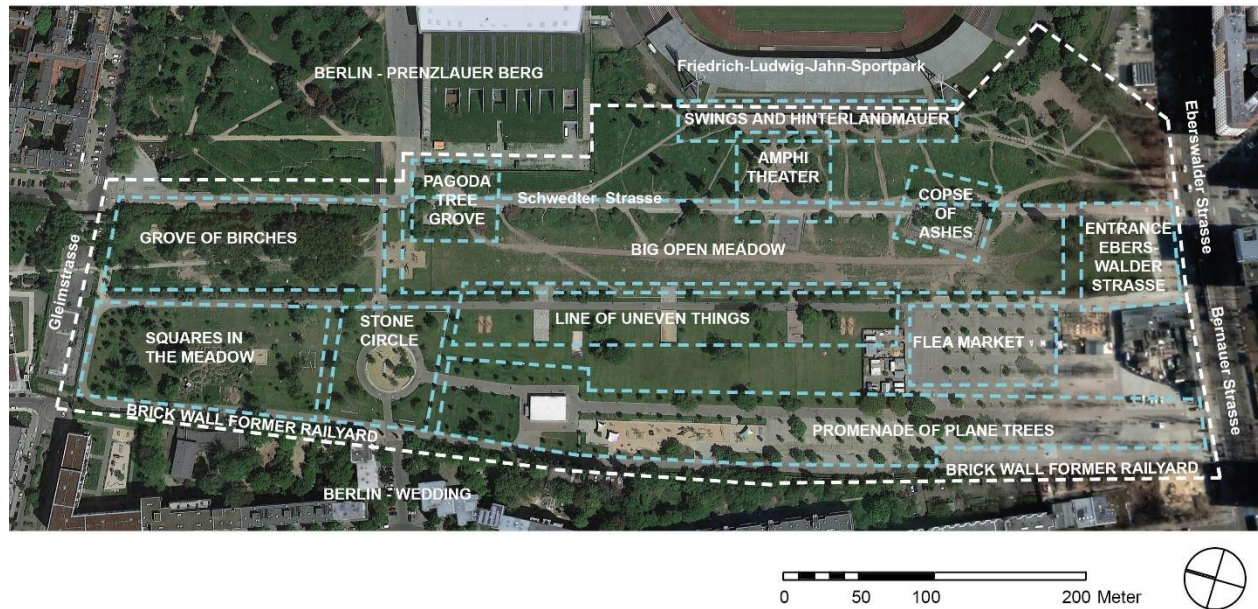


Figure 1. Larger scale study area outlined in white and site scale study areas of distinct locations and places at Mauerpark outlined in light blue (google 2022).

3. Background and Literature Review

Geometrical form and sensory quality of materials in designs authored by Gustav Lange

The Andreas-Hermes-Platz, Hanover (GER), built in 1990, is one of Lange’s projects that is typical for his use of geometry and materials. Basic elements of visual art – points and lines – circular, rectilinear, triangular forms determine the design vocabulary on this plaza. This plaza also provides an introduction for Lange’s typical use of materials - plants, stone and water are creating a triad of materials that explore a variety of sensory quality. Lange describes the quality of the surface in detail and delves into the metaphoric importance for the choice of trees and the symbolic quality of the planned pool: “The ground cover is porous, of an aggregate lying between coarse sand and fine gravel; it is open, unsealed, an area that can breathe. There are willows for the wind and for dreams; columnar oaks serve as arboreal leitmotif for the new architecture. The circular pool on the gravel mirrors the sky. The image-fragments that break out of the mirror are surface signs of a distant, foreign world.” (Lange 1996). The quote embraces Lange’s attention to the spiritual and immaterial qualities and the atmospheres he wants to create with the media of the landscape. This is also revealed in the design process for any project that has worked on. Images are retrieved from his extensive travels from gardens all over Europe, Asia and include local daily trips, or inspirations out of books of gardens and landscapes. Lange was a constant observer including appropriation of places through people. These images are leitmotifs and are applied from the early design process and used iteratively even during construction. This design method indicates Lange’s mindfulness to detail. Gustav Lange reinforced in various conversations with the author that the correlation between form and legibility plays one key role in his design philosophy. In other interviews it was revealed that contrastingly, he also criticized overdesigned places that would limit the degree of randomness and openness for self-driven activities and free spirit of mind. Lange: “The interstices and seams are the free space of the city. The space in-between is freedom. Spontaneity is essential for life

and living in the city.” (Sleegers 2022). Therefore, it is necessary to reveal more about Lange’s dialectic approach in his design philosophy that embraces both formal aspects and explorations of randomness and spontaneous process-driven elements.

Principles of visual arts and geometry as ordering mechanism in landscape architecture

A background on the principles of visual arts and geometry, and visual-aesthetic principles for evaluating landscapes provides the framework for studying Lange’s design language at Mauerpark. The principles of visual arts and geometry in western culture provide an understanding of visual design elements and how their organization affect perception. These principles are based on an extensive body of theory that dates to the Early Dynastic Period of Egypt 3000 BC and were evolved by the ancient Greek philosophers and mathematicians from Pythagoras to Archimedes. Motloch (1991) explains that straight lines and right angles can impart an architectonic quality of form and stability, sloped lines and acute angles impart motion, instability, and movement, whereas curved, sinuous lines impart a more naturalistic, passive feeling. Rectilinear, angular, and circular geometry define primary shapes or forms (Ching 1979). Integrating these elementary geometries involves the development of concurrences and relationships between these forces. One geometry can be dominant and the other recessive (Motloch 1991). Motloch describes those rectilinear compositions maintain an underlying degree of continuity while providing many opportunities to manipulate individual elements to achieve variety, dynamic balance, rhythm, and emphasis. Angular compositions, other than 90 degrees are inherently energetic. When a rectilinear design composition coincides with orthogonal edges of the context, a static sense is reinforced; when these angular relationships do not align with the context, dynamic energies are introduced. Parallel lines dissolve energy, radiating lines convey energy. In general, angles convey dynamic energies and senses. Circular geometry usually imparts a passive, resolved feeling as it displays a trace of a point moving around a stationary point at a fixed dimension. This sense changes when special relationships between circular shapes are articulated, compositions of circular shapes, rectilinear-circular, angular-circular, or rectilinear-angular-circular composites are created.

Visual principles in design-based theory and perception-based theory

In the last 50 years, the research on evaluating landscapes has been focusing on perception-based theory (S. Kaplan & R. Kaplan 1989; Ode et al. 2008) while there is significant overlap with the theories of design-base theory. The design-based approach investigates the features of the landscape as an evaluable, intrinsic physical attribute through the theory of formal design parameters and their interrelationships. Loidl and Bernhard’s *Opening Spaces* (2003) bridges the gap between design and perception theory and presents a comprehensive overview about principal design concepts in landscape architecture and their relationships. Unity and complexity are considered the core concepts of design. Perception researchers refer to the requirement for unity in understanding and reading the environment and addresses two-dimensional aspects while complexity relates to density of content and addresses three-dimensional aspects (S. Kaplan & R. Kaplan 1989; Ode et al. 2008). Similar component parts and themes achieve unity, complexity creates desirable tension and reinforces the uniformity of individual components, for example, through contrast (Loidl & Bernhard 2003).

4. Method and Data

The scope of the paper is an investigation of Gustav Lange’s design language and the relationship

of design strategies at three scales at Mauerpark. The analysis is based on the built project. Information was retrieved through site visits, aerial photographs, personal collaboration and interviews with Lange, design concept drawings, historic and recent construction documents, and physical concept models. Figure 1 displays the boundaries of the larger scale study area and study areas for distinct locations. A composite plan maps all key features (Fig. 2). The larger area scale investigates Lange’s attention to graphic composition, their shapes and organizational principles, and the relationships of mass and voids. The site scale of distinct locations and places allows focus on the relationship between different geometrical shapes and the assessment of the materials. Finally, an investigation on the detailed object scale allows for an assessment of tactile and atmospheric qualities of materials. This investigation focuses on exemplary and representative situations.

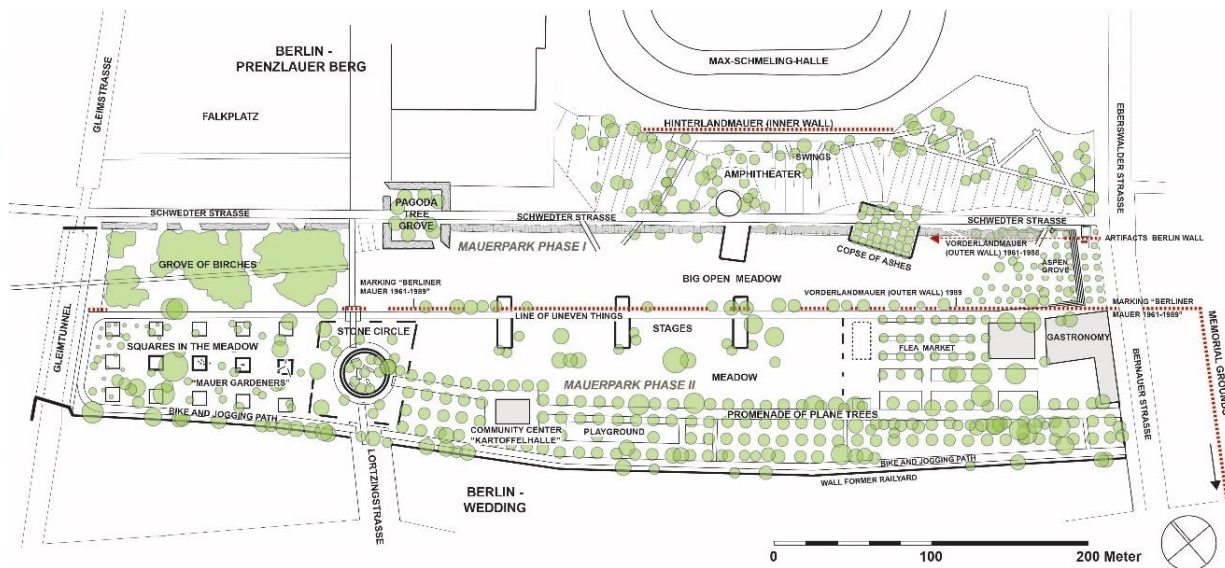


Figure 2. Composite plan of Mauerpark (Slegers 2020). The park is approximately 170-230 m wide and 700 m long. In the history of the Berlin Wall, the Vorderlandmauer (Outer Wall) shifted 50 m further from Schwedter Strasse to the west in 1988. Underground artifacts from the 1988 Wall were found at the entrance Eberswalder Strasse and were integrated in the design. The Hinterlandmauer (Inner Wall) at the eastern boundary is the only structurally sound leftover of the Berlin Wall.

5. Results and Evaluation

The analysis starts with an assessment of the prevailing geometric parameters and their relationships and is followed by an evaluation according to the principles of visual arts and values of design-based theory. Figure 3 displays prevailing composition lines and axes, principal geometric forms and shapes for distinct places and locations in the park designed by Lange.

Larger area scale – The major focus within this scale is the mapping of the prevailing graphic composition including general planting patterns, the relationships of mass and voids created by existing and designed vegetation, and the general role of form.

Axes and grids– The narrow proportion of Mauerpark is reinforced through parallel, linear corridors from south to north that are distanced 50-60 meters (150-180ft) from each other. They were inherited by the history of the area, while the “Promenade of Plane Trees” was introduced by Lange to connect from the entrance Bernburger Strasse to the community center

“Kartoffelhalle”. The Schwedter Strasse is the most important axis in the design. It also delineates the location of Berlin Wall from 1961-1988. Further west, the “Line of Uneven Things” delineates the Berlin Wall from 1989. The axis on the hillside along the “Hinterlandmauer” is the eastern boundary of the park and joins to shorter, diagonal axes to connect the lower, main level of the park. On the western edge, the brick wall and property line of the former railyard defines a segmented corridor that slightly deviate from the parallel orientation of the other axes. The only east to west corridor connects the two neighborhoods, “Wedding” and “Prenzlauer Berg” and is interrupted through the “Stone Circle”. Major distinct locations and places are aligned along Schwedter Strasse and the “Line of Uneven Things”. This is reinforced through the patterns of planted trees that geometrically reference the axes. Trees from inherited, existing vegetation interrupt the regularity of gridded tree plantings.

The major compositional axes are supported by grids as an organizational system.

Relationships of voids and mass - openness and enclosure through vegetation – The graphical mapping of tree and larger vegetation coverage provides insights on the use of vegetation at a larger scale and Lange’s concept of defining the spatial composition of the park. The “Big Open Meadow” has no trees or shrubs and references the openness of the former Death Strip - one of Lange’s key design ideas for Mauerpark. Spatial juxtaposition between openness and enclosure is legible through the 90-degree angled tree grids that are predominantly used alone without being reinforced through hedges. Occasionally, these grids are interrupted by the larger canopy of non-planted existing trees and create a degree of randomness. Randomness is also expressed at the “Grove of Birches” - a planted grove that is the only larger tree planting that follows this geometry. A linear juniper hedge along Schwedter Strasse reinforces the most significant axis in the park. The tree grids and places with a rectilinear outline – the “Copse of Ash Trees” and the “Pagoda Tree Grove” express traditional Euclidean geometries.

General role of principal geometric forms and shapes

Squares, rectangles, and circles are principal geometrical shapes that are used for distinct locations and places in the park. The form of squares and rectangles are reinforced through superimposition of 90-degree grids as tree plantings or the arrangement of subareas and reinforce unity and stability through the parallel or orthogonal composition. While many places in the park follow a strive for form and stability, there is an even occurrence of variations and transformations within the park. These are angular compositions other than 90 degrees, dissolving and transformed grids, and circular geometries that articulate special relationships. These exceptions are prevalent in the older part of the park.

Main materials including trees

One of the lead materials are rough cut Polish granite blocks that are used throughout the park and reinforce sense of unity. Trees are prevalently used as single species massing (ashes, pagoda trees, aspen trees, plane trees, birches) while multi-species small clumps (pine trees and wild cherries, columnar oaks and poplars), random specimen trees (columnar oaks, columnar poplars), or ornamental apple trees are added occasionally to the vocabulary. The same applies to the layer of existing trees that are more prevalent at Mauerpark Phase II due to the 30-year delay in construction. The use of trees emphasizes unity while diversity-generating strategies are applied as well.

In summary, the composition with parallel axes and right-angled grids express stability and architectonic quality and create a solid, geometric framework on the larger scale. The same is applicable for the use of single-species tree plantings. Mass and void and relationships reflect a degree of randomness through integrating existing vegetation and adding random planting patterns while relying on a unifying and formal expression through axes. The same can be said

for the role of principal forms and shapes. Occurrences of variations and transformations are balanced with occurrences of continuity and stability through geometric form.

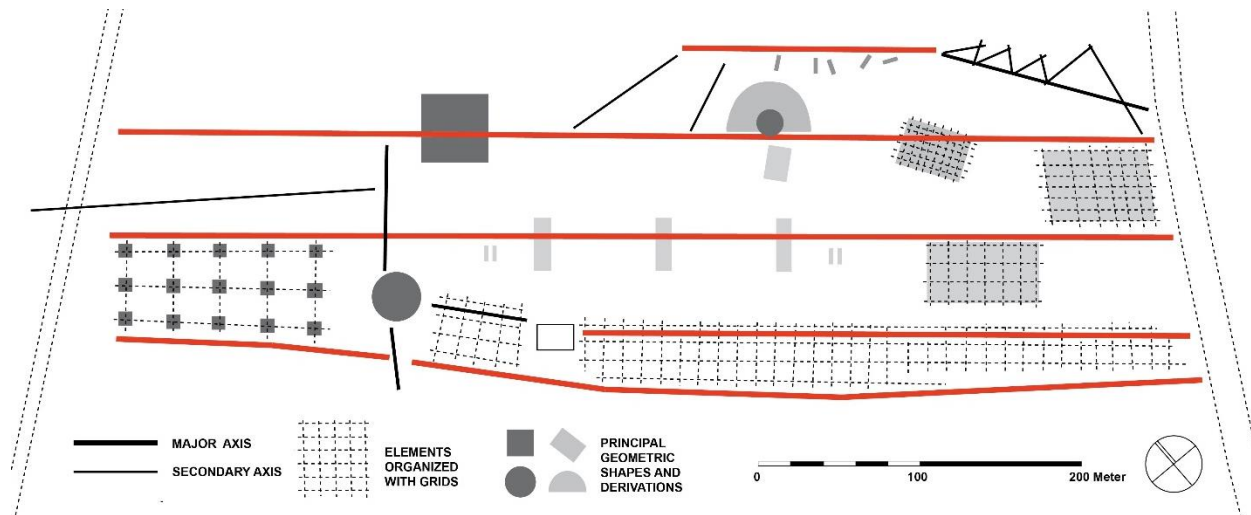


Figure 3. Prevailing elements of the composition: axes, principal geometric forms and shapes.

Site scale of distinct locations and places in the park – The major focus within this scale is the interplay of axes, grids and shapes of distinct places at Mauerpark. Four exemplary places are described in more detail. Table 1 presents a summarized assessment and results for these and other places.

The “Copes of Ashes” is superimposed as a slanted rectangle across the axis of Schwedter Strasse defined through a grid of ash trees (4.00-4.75 m x 3.50-3.75m) and an open rectangle of roughly hewn granite blocks as on the western side of the street. There are some gaps in the plantings and superimposition of singular trees into the main axis of the street that narrows down the street corridor. Boulders are placed randomly adjacent to some ashes. The slightly angled rectangle, the gaps in the planting scheme, superimposition on Schwedter Strasse, and the placement of large boulders convey energy and movement while still referencing the orientation of the main axis. The “Amphitheater” contains a semi-circular flight of steps and a circular platform that are oriented towards the park. Geometrically, both forms reinforce each other. A circular form imparts a passive, resolved feeling – this is different at this location because the semicircle of the amphitheater and the full circle of the platform create rectilinear-circular relationships with Schwedter Strasse. One circle, the flight of steps, is dissected through a linear axis, the other circle, the stage, overlaps with the main axis of Schwedter Strasse. Both features create a rectilinear-circular composite. Columnar oaks and poplars are randomly planted in-between some left out stairs and at the top of the open-air theater and convey a subtle energy.

The “Grove of Aspen Trees” marks the main entry to park at Eberswalder Strasse. The lines of the grid are parallel to Eberswalder Strasse, Schwedter Strasse, and the axis of the Berlin Wall from 1989 to the west. This results in a rhomboid grid that responds and relates to the primary edges adjacent to the plaza. Into the park, the grid dissolves through the increasement of the spacing of the trees from Eberswalder Strasse. The response of the grid to the surrounding geometries generates stability, while adding a sense of dynamic leading into the park. Stability is reinforced through a series of stairs that run parallel to Eberswalder Strasse and are carried around the edges to create tangible corners. They are executed in slanted, sloped lines in

relationship to the axis of the Berlin Wall from 1989 to provide an inviting, fluid gesture at this important gateway to the park.

The “Stone Circle” creates a node between the two different neighborhoods Prenzlauer Berg and Wedding and the terminus for the “Promenade of Plane Trees”. The “Stone Circle” imparts a passive and resolved feeling while Lange uses design strategies to convey a more energetic and dynamic language. The circle is defined by symmetrically stacked curvilinear blocks out of granite and segmented through radiating lines from the center of the circle. These gaps are offset from the three axes and provide accessibility and a sense of enclosure at the same time. Within the circle, objects such as linear granite blocks, a stone table, a mixed palette of planted trees – pines and wild cherries – and one leftover black locust from the pre-design phase create a sense of randomness and wilderness.

In summary, the use of primary geometric shapes and the use of primary organizational elements such as axes and grids create orientation and account for legibility and stability on the site scale to create unity. This strategy is balanced with variations or contrasting geometric compositions, random plantings, and placement of boulders or granite blocks as focal points that add content to create tension and complexity.

Designated Place	Geographic Location	Guiding Geometries	Relationship and Orientation of Geometries	Prevailing Materials and Placement
Mauerpark Phase I				
Copse of Ash Trees	Axis Schwedter Strasse*	Trees aligned with rectangle	Slanted rectangle crossing Schwedter Strasse	Granite blocks, randomly placed boulders Ash trees Surface: gravel
Amphitheater	Axis Schwedter Strasse	Half-circular seating stairs Circular stage	Amphitheater dissected by Schwedter Strasse, circular platform overlaps Schwedter Strasse, random placement of pyramidal oaks/poplars	Curved granite blocks pyramidal oaks/poplars, Surfaces: granite and basalt pavers platform, gravel in between
Pagoda Tree Grove	Axis Schwedter Strasse	Rectilinear	Square crossing Schwedter Strasse Random placement of trees	Granite blocks and stairs, Pagoda trees Gravel surface
Five Swings	“Hinterlandmauer”	Rectilinear	Slanted rectangles at diverse angles in relationship to “Hinterlandmauer” Oversized rectilinear frames for swings	Wooden frame for swings Granite curbs with sand infill
Groove of Birches	Axis Schwedter Strasse	Random	Random placement of trees, tree canopy overlaps diagonal, small pathway	Birches Grass Gravel surface for pathway
Mauerpark Phase II				
Grove of Aspen Trees**	Entry Eberswalder Strasse	Trapezoid grid	Schwedter Strasse, Eberswalder Strasse and Berlin Wall 1988-1989 define orientation of grid that dissolves from the street into the park	Granite blocks and stairs Aspen trees Surfaces: gravel (lower level and space between stairs), grass (upper level)
Line of the Uneven Things	Pathway delineated by Berlin Wall 1988-1989	Rectilinear	Three stages in regular pattern crossing pathway	Granite blocks Surfaces: wood, granite flagstone, gravel
Stone Circle	Northern area of the park, pedestrian/bicycle axis between eastern and western neighborhood	Circular Trapezoid rectangle for peripheral space Random	Circle defines a interior plaza and exterior pathway Rectangle aligns with “Line of the Uneven Things” and brick wall as former western boundary of railyard	Curved granite blocks for circle, linear blocks randomly placed for interior Trees: pine and cherry trees, existing black locust Surfaces: Gravel (interior)
Squares in the Meadow	Northern area of the park	Rectilinear Squares placed in regular grid	Outer squares align with “Line of the Uneven Things” and brick wall as former western boundary of railyard	Granite blocks and cubes Surfaces: grass, seeded flowers, sand around children’s fountain
Flea Market	Between “Line of the Uneven Things” and Promenade of Plane Trees	Rectilinear Regular grid alignment of trees	Grid aligns with Berlin Wall 1988-1989 and Promenade of Plane Trees	Pagoda trees Surfaces: asphalt and gravel
Promenade of Plane Trees	Pathway from Eberswalder Strasse to community center “Kartoffelhalle”	Regular grid	Parallel to “Line of the Uneven Things”, Axial connection, spacing of rows adapt to spacing of existing vegetation Continuation of the grid to the western brick wall as former western boundary of railyard	Plane trees and existing vegetation Surfaces: asphalt for main axis, lateral areas historic granite pavers and gravel

* Axis Schwedter Strasse delineates the Berlin Wall until 1988; ** Grove of Aspen Trees has been redesigned after integrating artifacts from the Berlin Wall that were found in the winter of 2018.

Table 1: Designated places, and geographic locations, guiding geometries, their relationships and materials. Prevailing geometries are altered in variations while the palette of materials is reduced and consistent.

Detail Scale – This scale takes a closer look at the atmospheric qualities of Lange’s design at Mauerpark. Moments of randomness that played a tertiary role in the assessment at the larger scales have a leading presence on the detail scale. Unity is achieved through the robust and consequent choice of materials, rough-cut blocks of granite at consistent formats varying only in the different lengths, and single-species tree plantings for distinct locations with a minimum of variations and exceptions. The selection of images displays spontaneous vegetation that settles in the cracks and gaps of granite blocks or pavement, planting boxes are arrayed and planted by the gardeners, a self-designed fence at the community garden “Die Mauergärtner” has been painted by children (Fig. 3).

In summary, Euclidian geometries are absent on the detail scale, and an evolving, process-oriented geometry of natural form dominates that is in harmony with built expressions done by non-experts in design.



Figure 3: Interstitial spaces: The formal design language is abandoned on the detail scale allowing for random vegetation and unplanned activities. From left to right, clockwise: Spontaneous vegetation at Schwedter Strasse; Joints in the pavement of the former railyard; plant boxes designed and arrayed by community gardeners “Die Mauergärtner”; self-designed fence at the (Images: Sleepers 2020).

6. Discussion and Conclusion

The analysis reveals that there is evidence of formal, geometric execution of Lange’s design that are mixed with moments of variations and exceptions. This phenomenon is increasing gradually from the larger scales to the smaller design scales. Therefore, from a more close-up perspective, this sensation changes as geometries and lines are broken up and thus increase complexity.

Findings from the spatial analysis of Mauerpark reveal that the design of Mauerpark offers a large portion of void and open spaces that are kept free while the smaller spaces create rooms with a high degree of intricacy. The large and mid-scale of the design follows the script of advanced design skills and craftsmanship. Unity and variety are well balanced and in harmony to provide the larger framework. On the small scale the design is random, materials show interstitial spaces, cracks and joints, roughness. Some parts may seem unfinished, provide more process than product. These qualities seem to lead to moments of unpredictability, self-authored, spontaneous appropriation through users, unprogrammed and ever-changing activities through people or random distribution of pioneering, vagabonding plants. Lange's work reveals a contradiction between the formal and the random.

From another perspective, the strategy of integrating a process-oriented mindset at Mauerpark, displayed as a product of urban wilderness and people's creativity, generates a different level of unity. Designers like Lange can play a crucial role in directing spontaneous activities and growth and understand formal frameworks as a flexible and unified canvas. Lange's call for a necessity of interstitial space (1996) is present at Mauerpark. Lange: "The nature creates compositions that no human being can ever create." (Sleegers 2022).

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