Compositional Features of Modern Urban Landscape Spaces

V Dormidontova

1Dormidontova V, Department of landscape architecture, Bauman Moscow State Technical University, 2 Bauman Str., 5/1, Moscow, 105005, Russia

E-mail: v.dormidontova@mail.ru

Abstract. The article is devoted to the studying of the compositional solution and the analysis of the creation of parks characterized by linear-axial composition. The historical roots of linear spaces are noted. The history and principles of creating Promenade Plantee in Paris, High Line Park in New York, the Tide in London, the Cheonggyecheon Park in Seoul are outlined. On the example of these landscape objects the compositional analysis is fulfilled. As a result, the basic principles of modern linear-axial spaces compositional construction are identified. Distinctions from historical analogues are highlighted. It is concluded that the linear type of space has flexibility and susceptibility to new functions, the ability to transform in modern conditions into an actual, urban planning justified and popular model of urban public space.

1. Introduction

Since ancient times, people have tried to give the natural and urban space certain forms, to subordinate them to their ideas of beauty. With the passage of time, recording various stages of human development, there appeared: point-centric, linear-axial and polycentric types of spatial organization [1]. Appearing in different eras, each of them is still relevant today. It is possible to assess the sustainability of these historical types of spatial organization and trace their transformation today by analyzing modern objects of landscape architecture.

The spatial organization of the garden since ancient times has reflected the corresponding time picture of the world, worldview, vision of nature and the place of man in it. On the example of gardens of different historical eras, one can trace the clear evolution of compositional techniques. In the Ancient World and in the Middle Ages, when the idea of a centric world order dominated, small spaces of gardens were formed according to the principle of point-centric construction of a composition of a closed and protected type of space, where the movement of the visitor is formed around the center and towards it [1].

Linear composition began its formation in the temple complexes of Ancient Egypt, became the predominant type of spatial organization in the era of anthropocentrism in the gardens of the Renaissance, Baroque and Classicism, accumulating a rich palette of compositional techniques [1]. The garden space was lined up along the compositional axis, secured by paving and connecting a series of centers. The movement was organized subordinate to the axis, along it, from one compositional center to another. This type of spatial organization presupposed the presence of a chief and a subordinate.

The expression of biocentrism and a mechanistic picture of the world has become a polycentric composition, which has organized many different-sized, but compositionally equivalent centers, interconnected by circular routes [1, 2].
In modern landscape architecture, you can find reflections of all three types of these historical spaces. But due to the abundance of long-distance connections in the structure of cities undergoing reconstruction and modernization, requiring improvement and landscaping, linear compositions are of the greatest interest. In recent years, various countries have accumulated considerable experience in the construction of linear parks, which provides sufficient material for the analysis of compositional techniques and means [3-9].

2. Theoretical part

Linear-axial compositional techniques can be observed on the example of modern linear parks Promenade Planté in Paris, High Line in New York, Tide in London, Cheonggyecheon in Seoul.

Back in the late 19th century, a supporter of the idea of creating linear parks was one of the first landscape architects in the United States - the chief architect of Central Park in New York, Frederick Lowe Olmsted. Later, the idea of creating linear green spaces began to gain popularity in the 1960s and 70s in the United States, due to both the growing demand for public recreation areas and the increasing number of unused transport routes. Such a modern trend as the reconstruction of the former railway lines in the classification of public spaces was called "Rail to Trail" ("Railway track") [10].

Promenade Planté became the first linear park on the site of a railway line. The transport line from Paris to Strasbourg was opened in 1859 and stopped working in 1969. A section of the railway line with a length of about 4.5 km was reconstructed to create a linear park (Figure 1) [11, 12]. Reconstruction by the architect Philippe Mathieu and the landscape architect Jacques Vergeli began in 1988 and was completed in 1994. According to the concept, the construction of this green boulevard was inspired by the mythical gardens of Semiramis.

Figure 1. Promenade Plante in Paris.

One of the most original parks in Paris, the Promenade Planté, whose name means “a walk with trees”, with an area of 6.5 hectares and a length of 4.5 kilometers, has quickly become one of the favorite walks of Parisians and visitors alike. The Plante Promenade is an extended structure of a green public space, which has become a place of attraction for a large flow of people due to a wide palette of opportunities provided, a variety of leisure activities, services, services, activities that allow people to realize their need for a rich and interesting vacation. There are also playgrounds, and even a small "theater" in which residents of neighboring houses arrange their holidays [13, 14]. The popularity of the Promenade Plante is explained not only by the opportunity to take a break from the constant movement of a busy city, but also by the variety of “pulsating” open, semi-open, closed spaces that flow into one another, landscaped with aesthetic and functional small forms, as well as an abundance of plants that amaze with the beauty of combinations of textures and tonal relationships [15].
Another example is the Hine Line, a linear park on an old abandoned flyover linking Brooklyn and Manhattan in New York City.

In New York at the beginning of the last century, industrial quarters and warehouses were located along the Hudson. In the 30s of the 20th century, in order to remove freight trains from city streets, where they posed a threat to pedestrians and caused inconvenience to cars, an overpass was built with a height of about 10 m above the ground. In some areas, it passed directly through buildings, speeding up the process of unloading and loading goods. Thus, the architects saved the city from the “Death” road, on which various accidents constantly occurred [16]. Over time, the railroad became unclaimed, as New York developed more and more as a financial center and industrial enterprises lost their dominance. The road stretched among office buildings without maintenance and gradually rusted. In the 1980s, its southern part was demolished; in the 1990s, the idea of dismantling the road along with the flyover was actively discussed. But the decision was made to transform the paths into a linear park, similar to the Promenade Plante in Paris, opened in 1993.

The opening of the first section took place on June 8, 2009. The next two sections were completed in 2011 and 2014. The High Line is 2.3 km long, which is less than half the length of the Plante Promenade. However, the High Line is a piece of wilderness amid glass skyscrapers (Figure 2). The main principle is eclecticism and carefully thought-out negligence, one zone turns into another, a flat track for running - into a kind of wooden amphitheater for those who want to relax [17].

The competent organization of the space, the selection of small architectural forms and equipment that fit perfectly into the existing space is impressive. Various materials were effectively used in the construction of this park: wood, stone, metal. It is impossible not to mention the fact that the authors of the project decided not to remove the old rails, but to make a unique type of paving out of them. And also one of the features of the described object was the preservation of the existing vegetation. The architects competently emphasized the variety of existing plantings, they developed an original paving that “grows” from plant compositions, continuing a single metric system, which also includes rails as “quotes” reminding of the previous use of this territory.

![Figure 2. Fragment of the High Line Park.](image)

Currently, the High Line Park is a favorite place for both locals and tourists. On this territory, photo sessions are held, picnics and holidays are arranged, and you can also regularly meet people involved in active sports here [17].

The success of New York's High Line Park brought fame to the architects Diller Scorfidio + Renfro and has led to the emergence of a number of similar public spaces around the world.
Over the past decade, the New York architects of the Diller Scofidio + Renfro bureau have created three similar objects, including the named one, Zaryadye Park in Moscow and the Tide Park on the Greenwich Peninsula [18-21].

Tide Park is located in one of the fastest growing areas of London and is a pedestrian overpass raised to a height of 9 m. In the future, it should become "a 5 km network of public spaces and gardens, built into the daily rhythm of Greenwich Peninsula" [18]. The riverbed of the park winds through the territory of the peninsula, forming the main axis - the promenade on "legs", which provides a walking transit. On different sides of the main stream, bays are formed - centers of attraction - "legged islands, such as amphitheaters, observation platforms, and places for recreation. The authors of the project insist that, at least in this case, the undulation is not only a design move, but also a functional solution. The Tide, trickling through the existing development (Figure 3), will link all seven Greenwich districts. In 2019, only the first 1 km section was opened. The designers of the High Line in Manhattan in New York and Zaryadye Park repeat the techniques already found. There are weeds, and paving, "growing out of plant compositions" (Figure 4), and a bridge - an observation deck, similar to the "floating" boomerang bridge in Moscow (Figure 5). Just like the architectural solution, the landscape is cosmopolitan. Despite the different climatic conditions, the assortment of plants is the same as in Moscow in Zaryadye Park: birches and pines, grasses and wildflowers. Some areas are accented with works of art - sculptures by British artists Damien Hirst and Allen Jones. Nearby, on the water, the steel 30-meter "Quantum Cloud" Anthony Gormley already "lives" [18].

![Figure 3. Fragment of the Tide.](image)

![Figure 4. Meter of paving and landscaping elements.](image)
Cheonggyecheon Park in Seoul has a typical linear-axial organization, primarily due to its location along the Cheonggyecheon Brook, on the site of the former highway [22]. On both sides of the park there are car lanes of a busy street. Thus, the park has an extremely limited design space in width: only two narrow strips of bank along the stream, but the length of this linear park is 8 kilometers [23]. These conditions were wisely and cleverly used in planning. There are 22 bridges throughout the park, allowing you to cross the stream almost anywhere. But they are not only part of the road and path network, but also interesting architectural objects that attract people, since each bridge is unique and made in its own style and using different materials. In addition, bridges are transverse articulations that hide the tedious length of a narrow space, visually expanding it and diversifying the walking path.

The linear park is designed in such a way that when moving from one end to the other, one can observe the dynamics of space development. At the beginning of the path, the predominant part is given to paving, then some blotches of bushes and trees appear along the road (Figure 6), then the greenery gradually descends, and, in the end, conquers almost the entire space. At the end of the path, approaching the place where the Cheonggyecheon Brook flows into the Yunnancheon River, the surrounding landscape may well be mistaken for natural [24, 25].

A distinctive feature of the park is a large number of fountains of various shapes and sizes on its territory. All of them are unique and are a kind of secondary compositions fixed on the general axis of the park, emphasizing the development of the park vertically.
Cheonggyecheon Park is an example of a modern interpretation of a linear-axial composition, more flexible and free in comparison with historical counterparts, competently inscribed into the urban space, enriching it, and providing a large number of visitors with a comfortable place for recreation and entertainment.

3. Conclusions
The performed compositional analysis showed that the principles of organizing modern linear spaces differ significantly from the principles of constructing historical analogs. Linear-axial type of space, characterized by the predominance of length over comparable parameters of width and height. This type of space was used in the gardens of the Renaissance, Baroque and Classicism, as a manifestation of anthropocentrism and the desire to order nature. At the same time, strictly symmetrical compositions were subordinated to a straight axis, on which the main and subordinate centers were located. Linear composition is actively used in the creation of modern parks and public spaces. But today it is opposed not to the surrounding nature, but to the existing buildings, which often make us move away from straightforwardness. Developing in the intervals between buildings, linear spaces acquire plastic outlines, but their general arrangement is usually elongated in any direction, which determines linearity.

Today, linear parks are an extended structure of green public space that performs both recreational and transit functions. Modern linear park compositions are multifunctional, which is a feature of all public spaces in a modern metropolis. They contain a series of spaces of different content and design, provide visitors with a wide range of opportunities and become places of attraction for a large flow of people. However, their compositions do not necessarily consist of repeating elements, there is no main and subordinate in them, they are open-ended and emphatically dynamic.

Despite the current trends in the development of landscape architecture, the compositional organization of space uses the classical laws of building a composition in a modern interpretation. The considered objects demonstrate the flexibility of the historical linear type of space, its susceptibility to new functions, the ability to transform in modern conditions and continue to accumulate compositional techniques, turning into an actual, town-planning justified and popular model of urban public space. With the use of modern materials and technologies, as well as a well-chosen tree and shrub composition, such spaces have high aesthetic and recreational properties.

Thus, we can conclude that modern spaces created using the techniques of linear-axial compositions do not lose their relevance and continue to develop in the modern world, responding to the global trend of transforming linear structures into connecting arteries of the city.

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