Authors' concepts, methods and techniques of architectural design in creating unique park spaces

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Abstract. The purpose of the research is to study some aspects of design, in particular, to consider the application of authors' methods and techniques, which resulted in the formation of unique spaces of popular park objects. The present study is based on photographic materials taken during field research, as well as literary and cartographic materials. The authors present some architectural tools that can be used in modern design under certain conditions (natural, climatic, cultural, economic) to create a comfortable urban recreational environment.

1. Introduction

Before considering specific examples of architectural concepts, techniques, and methods, we shall present definitions of some terms. The concept of "method" (Greek for "teaching") in some sources is defined as a way to solve a specific problem, a set of techniques or operations for practical or theoretical development of reality [1]. We present basic methods in the general sense that can be used in architectural design, namely: the complex method; the method of structural analysis; the method focusing on the content and form of an object; the method, in which the interaction between external and internal is prioritized; the method, in which functional expediency prevails over other aspects.

The complex method involves the analysis of a number of key factors that give a basic idea of the future object. The complex addresses many issues related to various areas of urban planning and architecture (territory planning, functional planning, structural, economic, architectural and artistic domains).

The structural analysis method considers the design object as a system of elements assembled into a certain structure. The elements themselves and the bonds (configuration, efficiency) are important here.

The method of object content and form reveals how the shape of an architectural object depends on its content and vice versa (content on form). For example, how concrete social, cultural, esthetic needs of the society may affect architecture.

We can also consider the interaction of an architectural object with the surrounding space. These aspects are described by the method of interaction between the external and the internal. The nature of this interaction determines the architectural design.

The next method of functional expediency, when creating an architectural object, prioritizes usefulness (expediency, function). The shape and internal structure are formed under the influence of the most efficient solutions to achieve certain goals, for example, providing processes to please consumers (customers). However, as experience shows, harmonious and aesthetically attractive forms
are most often also functional. This is probably due to the fact that measure and good taste have always been essential attributes of beauty.

The technique is a system of activities that includes each link necessary to solve the problem. Without careful development of all the links, the correct technique cannot be generated.

2. Results

Authors' techniques are part of the design method and, in some cases, apply to the implementation of the plan, that is, to construction. And it is the techniques that make a particular architectural object unique, form its memorable image, as well as contribute to the psychological, aesthetic and physical comfort of the consumer (in our case, the park visitor).

Architects who are well-known theorists proclaim their creative methods and techniques. Our ideas concerning an architectural object are expanding, and this applies not only to the given constructed building. We can apply this unique experience to analysis and design. However, the most interesting thing is to try to identify these tools yourself, without knowing what paths the author chose, after seeing the result – the park space and the processes taking place in it.

The style of a garden is defined by many characteristics: shaping (landscape park, regular park): the concept of a garden (kinetic garden, artifact gardens, installation gardens, gardens with artificial elements). The styles themselves can be divided into such categories as: "Ancient styles "(Egyptian garden, antique garden)," Large styles "(Medieval garden, Renaissance garden, Baroque garden)," Regional styles" (Chinese garden [2], Japanese garden, Oriental garden), "Modern styles" (high-tech garden, Techno garden). However, we are interested in the individual approach of a landscape architect and his/her own tools of creating a park. Authors of gardens and parks find new techniques and methods in their work. There is a huge variety of them, we shall consider only a few.

Methods:
- **regional zoning method** (Port Aventura World theme and leisure park in Salou (Spain) includes simultaneously several zones: Mediterranean, Polynesia, Mexico, Wild West, China. There is a clear style trend of plant and artificial facilities within each country. Theatrical shows in the spirit of national traditions are held in the zones);  

  ![Figure 1, 2. Port Aventura World theme and leisure park (Imperial China and Aztec Mexico zones). Spain (the author's photo of 2011).](image)

- **method of taking into account local natural features** (climate, terrain surrounding the city) (Central Park and Children's Park in Andorra La Vella (Andorra). The parks are designed to take into account the surrounding mountainous terrain, where the daily solar period is shortened due to the proximity of mountain ranges to the East and West. Parks with large areas without vegetation, or with trees that have a transparent crown, or with low plants.) [3], [4], [5];
method of using local natural conditions (Tsaritsyno Palace and Park ensemble in Moscow (Russia). The romantic landscape park is located in a picturesque area with ravine terrain and ponds. Architectural structures are built in the unified style (pseudo-Gothic) and the same color (red brick with white stone design of architectural details) [6], [7], [8];
method of applying philosophical concepts (Chinese gardens designed according to Feng Shui tradition. Water symbolizes money and prosperity. Each element (water, fire, metal, wood) occupies their own position on the sides of the world. The water reservoir activating the energy of chi is located at the entrance in front of the house. Leaves should not cover water, as this might result in stagnation of positive energy.);

- method of applying the principle of collecting (blue-colored plant gardens, rose gardens, iris gardens, exotic plant gardens, medicinal plant gardens, fragrant plant gardens);

- method of eclecticism (Castell Gala-Dali in Pubol (Spain). The original medieval Romanesque style of the garden was supplemented with some surrealistc elements by Salvador Dali;
Techniques:
- technique of space assignment (expansion view) (private gardens, California (USA), Thomas Church. The architect often used in his projects the park fencing "ha-ha" technique, which was well-known in England in the XVII-th century. The structure took the shape of wide trenches hidden from the eyes with a fence at the bottom, taking advantage of terracing as well. At the same time, the area of aesthetically attractive panoramas of visibility included nearby picturesque landscapes, with confidentiality borders respected);

Figure 13, 14. The garden of Castell Gala-Dali. Publ. Spain (the author's photo 2011).

Figure 15, 16. Private gardens in California. Thomas Church. [11]
- the technique of a new application of the material (substance) (a private garden in hi-tech style. The author considers the water element not as an element, but as a substance (liquid) inscribed in geometric shapes and light-reflecting plane);
- the technique of local material use and application of bionic structures (Parque Güell in Barcelona (Spain) [12], [13], [14]. Unique bionic structures were created from natural stone (similar in structure and design principles to natural objects (plants, animals), which are perfectly combined with the local landscape. In addition, individual galleries of this park are characterized by perfect acoustic properties. This is used by local musicians working in different genres to attract tourists).

![Figure 17, 18. Parque Güell. Spain. (the author's photo of 2011).](image1)

- the technique of optical elements use (private gardens in the style of optical illusions. Mirror surfaces (vertical, horizontal, diagonal, round) are used to transform the space. Painted textures and TV panels are used.).

![Figure 19. Optical installation "The Architect's Eye". S. Choban and S. Kuznetsov. Russia.](image2)

![Figure 20. Garden of Cosmic Speculation. Scotland. [13]](image3)
3. Discussion
The study showed that gardens and parks, both historical and modern, are widely known and, as a result, frequently visited objects of landscape art of global significance due to interesting authors' concepts. In some cases, they are highly functional (although not known) and act as urban recreation zones in certain, sometimes difficult conditions, such as climate and terrain. A landscape can become a unique material for creating a comfortable and architecturally rich environment.

A.P. Vergunov, a well-known practitioner and theorist of landscape architecture in his work "Architectural composition of gardens and parks" wrote: "The best gardens and parks are works of art built on the basics of harmony, regularities of rhythm, proportion, contrast, subordination of the whole and part, that is, on the same foundations as architecture, music, sculpture, painting. But due to the fact that the creation of gardens and parks uses living material that is in constant self-development, these patterns are less obvious. However, they exist and should be deeply understood by those who take on the difficult task of shaping the landscape." [15]

In his article "Method evaluation of the an urban landscape geometry according to the conditions of its viability", the architect A. G. Bolshakov remarks that it is necessary to develop a system of universal motivations that encourage investors to invest in the development of the territory, and the architect - to look for its spatial form. Motivations are the seven basic life necessities of the urban community: health, wealth, community, beauty, personalization, information, memory. [16] Viability and relevance of the park territories considered are eloquently demonstrated in these examples.

4. Conclusion
To expand the capabilities of the designer who is usually restrained by the terms of the order, it is important to replenish the library of techniques, methods and creative concepts. Also, case studies represent a research field for young architects, those who are to make their contribution to park (garden) design and come up with their own method.

The study identified the following authors' methods of architectural design: the method for regional zoning, the method based on local natural peculiarities, the method of local natural conditions application, the method of philosophical concepts application, the method of collecting principle, the method of eclecticism. The following techniques are also considered: the technique of space assignment, the technique of new application of material (substance), the technique of using bionic structures, the technique of using local natural material, the technique of using optical elements.

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