

Change Process of Forms in Landscape Design from Past to Present

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ABSTRACT

Every period and civilization has natural and cultural factors that influence the design elements. However, there is also an aesthetic understanding adopted by societies. Especially the lines that change / transform from time to time, maturing sometimes with contrasts and sometimes with similarities create the design forms. These forms are undoubtedly influenced by the design movements in the historical process. However, while developing the aesthetic understanding of the societies, the symbols specific to their culture and their reflections on the details of the architecture and exterior spaces are seen. In this study, the changes in the art of shaping nature throughout human history have been revealed and the reflections of human and nature relations on space have been examined through various project examples. Factors in the process of transition from geometry to organic forms were researched. Thus, the change of aesthetic perception has been observed over the years. Within the scope of the study, how the psychological changes of the societies as well as the physiological changes of the cities constitute the design forms are examined through the examples of model, adapted, or applied design. And by making abstractions on these examples, design transformations over time are given in a linear manner. The inclusion of this study in the literature will contribute to the other studies.

Keywords: Aesthetic, Form, Design movements, History of landscape design

INTRODUCTION

Natural and cultural factors have influenced design elements in each civilization. However, it is also important to mention an aesthetic understanding that is adopted by societies and changed/transformed from time to time. It is clear that aesthetic understanding is influenced by design movements in the historical process. This understanding might be shaped by culture-specific symbols and reflected in the architecture and exterior place details.

Of course, technology is constantly being evolved and reshaping everything it comes into contact with. However, this study focuses on the design forms they choose while there are different design formulas to choose from.

Furthermore, approaching design processes without knowing these, will bring some disruptions. Le Corbusier expressed the importance of time and the necessity of historical information in these sentences;

*“Today I am accused of being a revolutionary,
yet I confess to having had only one master: the past:
and only one discipline: the study of the past.”
Le Corbusier*

The Difference Between Aesthetics and Design

The term of aesthetics comes from the word perceptible in Greek and defines the field of philosophy related to the perception of beauty in its broadest sense. Most philosophers distinguished sensorial from

wisdom and intelligence. Thereupon, Edmund Burke, from the objects and thoughts that stimulate feelings of fear and pain; developed the concept of "glorious and beautiful" to distinguish those who arouse calm and controlled pleasure. The picturesque, often associated with William Gilpin, tried to respond to these ideas with a more gentler standard of pleasure, based on his picturesque, diversity, disorder and ability to provoke imagery. Such aesthetic ideals had been applied in sculpture, architecture, literature, painting, and more importantly in all arts, including landscape design [1].

The word aesthetics was used in the field of fine arts in the 1750s in the context of the search of beauty. It means related to perception etymologically.

While Vitruvius considers the concept of "beauty" as "logical harmony; Alberti considers it "logical, harmonious integrity of parts within a whole with no addition or subtraction can be made" [2].

Commonly, design is defined as an effort to intercorporate aesthetics in the external appearance of objects. Evidently, aesthetics is an essential aspect of design, yet design expresses further issues: design is a non-routine, defined, open-ended problem solving activity based on the idea and requires a multidimensional thinking and establishing links between different objects and concepts [3,4].

When Louis Kahn states that "design makes it necessary for one to understand layout", he reveals the importance of layout in architecture. The layout in an architectural composition can be defined as the arrangement of each part in an appropriate relationship and harmony with the whole. As can be understood from this definition, the definition of layout can be interpreted in a very subjective way. Alison and Peter Smithson say that "each new generation is trying to develop a new concept of dissatisfaction with a new layout of architecture, and that is the architecture" [2].

The First Design Process in Nature

Design process begin with the adventure of human existence in nature. Think about the Egyptian pyramids! It has cubic forms that emerge in an effort to leave a mark on nature at first. Or the examples of the hanging gardens of Babylon, which were thought to be one of the first gardens, that developed immediately after the pyramids, and were the first examples that led to the emergence of the ziggurats and landscape architecture profession (Figure 1). These pyramid forms started with examples of the symbol of power rising with the aim of reaching God.

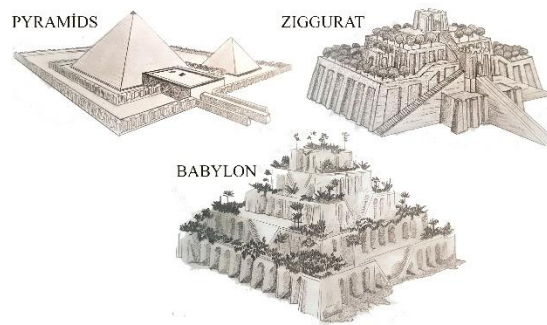


Figure 1. Transition between Pyramids-Ziggurat-Babylon [5].

Each civilization had an own landscape understanding. Undoubtedly, topography and climate were the most decisive factors on urban design process. Therefore, in the ancient times in egyptian cities had the canals of lineer pools, aimed at creating air corridors. However, this water traces had a solid understanding of simetry. This will then transform and affect the Char-bagh forms in Iran. These were both formal, symetrical and 4-covered gardens as well (Figure 2). Furthermore, when symmetry is used, it enhances the monumentality along with the effect of linearity and linear orientation.

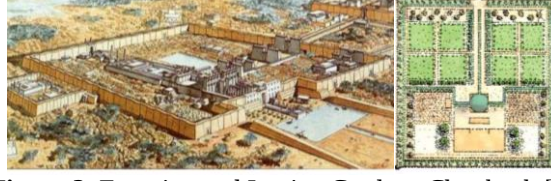


Figure 2. Egyptian and Iranian Gardens-Char bagh [6].

When the history of art is remembered, it is seen that the Egyptian and Iranian civilizations are the basis of Greek design. With its public and sacred architectural structures and designed cities, Greek civilization has a different place in the history of architecture. The Greeks took many things from Egypt from 750 BC to 350 BC and synthesized their first sculptures and stone-column architectures from Egyptian models. Greek architects developed an ideal system of building proportions, known as classical layouts and inspired by nature.

Classical Greek architecture has used a limited structural system of columns and beams, artfully decorated with elegant geometries.

Throughout history, architects have developed a variety of systems for proportion while seeking beauty. Among these systems, the golden ratio used since ancient times occupies an important place in the history of architecture. Although the golden ratio systems are conceptualized with Leonardo da Vinci, it is seen that these civilizations give importance to this mathematical layout.

The Golden Ratio

Vitruvius had defined "Architecture" as an adaptation of details to the whole balancedly and arrangement in a symmetrical view of proportions. In fact, by this he meant the capture of the harmony of each different part of a structure, the extent of its relation to another part [1].

Golden ratio, as the best proportion; defined in 300 BC. by Euclidean at first time: if a line is divided by 2, the ratio of the larger part to the small must be the same as the ratio of the whole to the larger part. The golden ratio is an irrational number and is written in the decimal system; 1.618033988749894 [1].

Golden Ratio, although it has always existed in mathematics and the physical universe, there is no definite information about when people have discovered and started to use it. It is likely that it has been rediscovered many times throughout history. For example, the Greeks based the entire design of the Parthenon on the Golden Ratio (Figure 3).

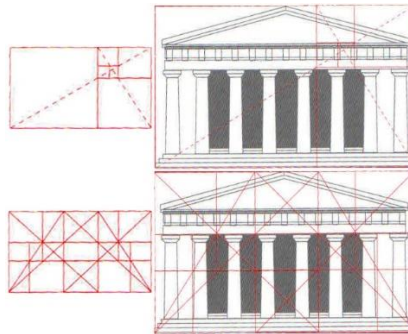


Figure 3. The architectural relationship to golden section [7].

In fact, these ratios are primarily in human anatomy. Then we can see this proportion in the most well-known examples in painting (Leonardo Da Vinci-Mona Lisa), music (Mozart compositions), sculpture (Michelangelo-Statue of David) and many other areas.

“Measure and proportion, as can be seen, can be defined everywhere with beauty and perfection...”
Plateau

In the works of the artists, what they use for gold ratio rather than how they use it, has been the subject of discussion. There are many scientific studies based on psychological perceptions. A study at Duke University revealed that the image containing gold ratio was more easily perceived by the human eye. Therefore, what we perceive as beauty may actually be the recognition of an image by which our brains do not have difficulty distinguishing [8].

Renaissance and Geometry

Renaissance, which means rebirth, indicates a break with traditional medieval architecture. The plans of this period have been designed through simple geometric shapes such as squares and circles in an effort to achieve a harmony-sense of perfection [1] (Figure 4).

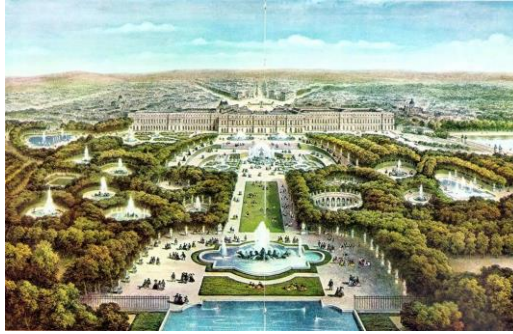


Figure 4. The Main Example of Renaissance Garden-Palace of Versailles [URL1].

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After a period such as the Middle Ages that dictatorship prevailed and this was reflected even in the vegetable gardens of the lowest scale with formal lines, the birth of the renaissance does not mean that all formality was suddenly broken.

As a matter of fact, symmetry is the most important and prominent feature of the landscape designs of this period. The same as easier perception of the golden ratio by the eye; symmetry is perhaps the easiest and most understandable concept in the world of all architecture's large geometry and number system.

According to some writers, architecture is historically a part of mathematics. In Classical Greek and Rome, architects were also expected to be mathematicians. For example, in the construction of Hagia Sophia, the Byzantine emperor Justinian gave the construction work to two geometry professors, Isodoros and Anthemios, in terms of showing the relationship between mathematics and architecture at that time [2]. Although it is possible to see wave forms with the emergence of new structural materials in the postmodern period, this geometry-architecture relationship continues today.

In fact, when every place we produce and the differences between uses, considered as fragmentary; It is based on knowledge of geometry and mathematics. The role of this information in understanding the layout and relationship in design and in the analysis of dialogue between spaces is clear.

Frederick (2007) reveals the difference between design and beauty as follows: “Beauty is due more to harmonious relationships among the elements of a composition than to the elements themselves... It's the dialogue of the pieces, not the pieces themselves, that creates aesthetic success.” [9].

Naturalistic Approaches

Naturalism is an art movement developed by adapting the principles and methods of understanding of

nature to literature and fine arts [10].

In the first examples of the reshaped English gardens, a transformation from formal gardens to informal gardens was observed with the effect of naturalism. Therefore, the elements belonging to the formal garden and natural elements have taken place together. A similar approach was able to reorganize the terrain with artificial hills and lakes in order to make the land look more natural than its natural form. The curved line was popular because it was considered closer to the concept of naturalness; such that the “S curve” was referred to as the “beauty line” [URL2].

After this trend, it is seen that informal designs also appear in buildings. In fact, we can see that in this period of understanding, which he started with Frank Lloyd Wright, which he called organic architecture, the structures were separated from regular geometry and inspired by natural forms.

This interest arising from naturalistic approach pitoresque; have taken the lead in to the landscape paintings reflecting the time, spreading meadows, ponds and tree groups. While rural areas were previously considered as dangerous areas that should be avoided (e.g. during the Middle Ages); endless forest depths have been romanticized with this movement [11].

In the case of Central Park, which is one of the most appropriate examples of naturalism (with S curves), the solid effects of the renaissance have shown to disappear and the symmetry disappear completely (Figure 5).



Figure 5. Central Park Plan-1857 [URL3].

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On The Way of Modernization

Modernism was put forward regarding the fact that the modern idea became a trend in the artistic and cultural domain from the midst of the 19th century [13,10]. “The main idea is that the time of traditional arts, literature, social institutions and daily life is up and therefore they should be put away and a new culture should be created. Modernism argues that everything from commerce to philosophy should be questioned. Thus, the elements of culture can be replaced with the new and better ones” [URL3,10].

The most significant modern art movements and styles are impressionism, symbolism, art nouveau (new art), fauvism, cubism, purism, futurism, expressionism, dadaism, de stijl (the style, neoplasticism), constructivism, surrealism, biomorphism, abstract art and social reality movements [URL5,13]. Cubism and biomorphism are the most effective modern movements on landscape architecture.

The movement of Cubism especially accepted as the origin of modernism in art, literature and architecture. And it described as a revolution in the development of art was developed against the traditional perspective, the use of light-shade and the theories accepting art as the imitation of nature; it created a new reality by bringing shattered objects together in a perceivable way from various aspects instead of imitating forms, textures, colors and spaces in nature [12,10].



Figure 6. The Effect of Cubism from Painting to Place [14].

Despite advances in theories of landscape and vision, many landscape architects continue to see and relate to physical environment in ways conditioned by the compositional structure of two-dimensional pictorial space. In subsequent decades, that way of seeing had some impact on garden and landscape design, but its larger potential is only now coming to be realised. Cubist principles involving form, space, and time are highly relevant to contemporary practices of landscape architecture [14].

Besides Cubism, Biomorphism has also been very influential in the fields of landscape architecture. Organic forms and shapes, which were introduced by microscopic discoveries of biology, were used here without considering the ideological accumulation of surrealism. Burle Marx is one of the important representatives of this movement [URL6].



Figure 7. Biomorphic forms-Burle Marx Designs [URL7].

While the linear imitation of nature dates back to ancient times, it is also involved in stylistic movements such as Art Nouveau and more recently in the designs of architects such as Frank Gehry. The metaphor effect based upon a decorative style and form searching are on the basis of this approach. In short, this approach emerges from the formal imitation of nature and is called “biomorphic architecture” [15].

Postmodern Movement

As a reaction to the modernist approaches to deforming, designers began to make new aesthetic experiments.

In postmodernism, creating artworks without adhering to aesthetical principles is regarded as a basis. The fact that postmodernism does not abide certain rules, enabled it to stand out in various areas. Postmodernism initially affected architecture, and then had an impact on painting, sculpture, graphic designs and landscape architecture. Postmodernism in landscape architecture is not just a trend but a movement including various styles such as deconstructivism and land art [13,10].

The theorist Charles Jencks states in his book "Jumping Universe" that after the developments in science, architecture can not be perceived as before and that architecture is changing depending on these developments. Jencks, as accepted in Darwin's theory, denies that the universe is slowly evolving or that nature functions like a machine, and defends that the universe is bouncing through new discoveries and information. At this point, it is possible to see the language of the jumping universe [2].

Forms that can be seen in nature are reflected in the fields of landscape architecture. Figure 8 shows one of Charles Jencks designs with lines that immitate nature.



Figure 8. Sample of postmodern landscape architecture [URL8].

Design Process of Today

Yedekçi (2015) states that “the architect should be like a caliper compass, while one foot stands on his own soil, and the other foot should scan the world [15]. The concept of scanning the world here is being made more synchronously in today's process. In the ongoing globalization process, especially due to the presence of the internet, currents are created in a much shorter time if compared to the past. Differences between places and cities are less visible today than in the past. Materials and architectural forms are becoming more similar, and our habits and behaviors are more similar as they become familiar with other countries and cultures [16].

For this reason, drawings, presentation techniques or project concepts are similar in landscape designs like a fashion trend. In Figure 9, examples of design competition projects about 15 years ago are showed. According to the project understanding in the last 5 years (Figure 10), it is seen that it is much more complex and the circles and “S curves” are much more.



Figure 9. Sample of landscape architecture projects in 2000s [17].

When the random examples that have been awarded in the design competitions in the last 5 years are examined; we see the presence of more soft and linear lines or organic designs. In today's examples, designs where maximum approach of orientation, transportation is solved simply and as far away from complexity as possible can be found.



Figure 10. Samples from design competitions in the last 5 years [URL9].

Even in the last 10 years, it is not known how the design approaches might will be changed in the next 10 years. However, the recent trend goes towards awareness such as sustainability, ecology-based approaches, smart cities etc. This is reflected in the design and day by day, the nature that we are breaking away, emulation began as a result of longing.

In design, there is a concept of emulation to nature. And this is the evaluation of form, function or systems in nature and transferring to design [18,4].

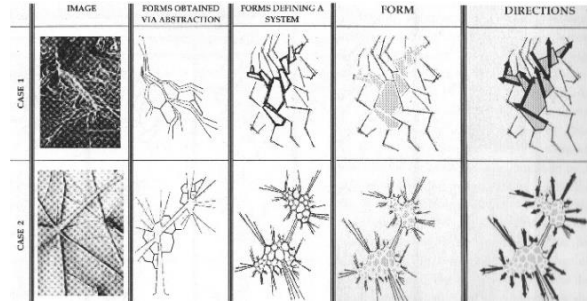


Figure 11. The example of geometric transformation of the image from nature [4].

Recently, the abstraction concepts which are also included in landscape design educations, the reflection of the forms in nature to the design and so on. fictions consider nature as the best resource by facilitating the intellectual process. Landscape architects maintain to create environments in harmony with the nature, not only functionally exemplifying it, but also continue to transfer the design forms.

SCOPE

In this study, the importance of historical process in architectural design forms and landscape project processes affected by design movements has been researched. The elements that affect landscape designs and the consciousness that guide today's design approaches has been tried to be revealed.

METHOD

In this study, a literature searches on historical process of design movements, aesthetics and modern-day projects of landscape design was carried out, and theoretical explanations and conclusions were given. In the light of the literature reviews, the importance of changing landscape design forms and currently available linear form preferences has been conveyed.

CONCLUSION

The world is incredibly complex today! Our social relationships, desires, imaginations, hopes and fears are quite different from those of 100 years ago. Perhaps, this is why we are in a process of necessities from complexity to simplicity. People are more aware that simple is the most difficult. We have made the most comfortable and basic choices from the phones we use, to the clothes we wear. And this is so on in a global scale as well.

We can see in the historical process that a movement; not only literature or art; but also affects behaviour, architecture, and therefore the whole city. In this context, our preferences of place, visual perceptions and their reflections on the landscape are extremely important. As our lives get complicated, we look for psychologically simple solutions. And the reflection of this to landscape architecture is the simplest and easiest in the linear direction. If we know which complex processes we go through, in which period and why our preferences change and how we shape them; in the next design process, we catch up to that age and follow the requirements of the today's design process more consciously.

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