

**O 10. THE EVALUATION OF THE ADVANTAGE-DISADVANTAGE AND DESIGN  
EFFECTS OF LIVE-LIVING MATERIALS**

Somayyeh Kheyri<sup>1\*</sup>, Kubra Yazici<sup>2</sup>

<sup>1</sup>*Islamic Azad University, Faculty of Architecture, Shabestar, Iranian*

<sup>2</sup>*Yozgat Bozok University, Agriculture Faculty, Landscape Architecture Dept, Yozgat, Turkey*

*E-mail: kheyrisomayeh@gmail.com*

**ABSTRACT:** Natural and artificial materials are interrelated in landscape planning. The landscape architect has to plan harmonious and sustainable partnerships between landscape materials. In this study, the usage areas of living and non-living material which used in the example of City Park Aiolis City Memory and Memorial House located in İzmir Aliaga Yeni Neighborhood, were discussed in a multifaceted way. In the applications, advantages and disadvantages were examined and security problems arising from incompatibilities, lack of relationship and deficiencies were evaluated. In such landscaping works where living and non-living materials were used together, while considering the advantages of the materials. the compositions that they come together should be examined at every step without ignoring.

**Keywords:** *Live and non-living elements, İzmir, Artificial Materials, Landscape Design*

**INTRODUCTION**

Natural and artificial materials could not be considered independently from each other in landscape planning. On the contrary, the landscape architect has to plan the landscape materials harmoniously and sustainably. In addition, it is necessary to recognize artificial materials as well as natural materials and to establish their relations with each other. The correct fiction of these relationships; It enables them to recognize and use the planned and designed area correctly by the users and meet their expectations (Kurdoğlu et al., 2013; Akdemir et al., 2009). Reinforcement elements play an important role in the creation of the artificial environment as well as meeting the functional and aesthetic needs of people (Kuşku and Yılmaz, 2003). Urban equipment elements are products that provide communication between the urban life and social life style of human. The dimensions and shapes of the design components of the space and the reinforcement elements should show parallelism with the anatomical, physiological and psychological dimensions of the person who will use it (Özkan and Küçükerbaş, 1995; Nelischer, 1998; Yazici et al., 2018). Before deciding on the use of living or non-living material in landscape designs, area should be examined very well and the positive and negative aspects of both methods should be compared. After the decision is made, the most important step to be taken is the selection of living material and the possibilities of procurement, the legal aspect of the area and the social structure of the people around. Inanimate materials could provide efficacy as soon as they were finished, and the material could be easy to provide in general. The positive and negative aspects of living material were explained in below (Yavuzşefik and Uzun, 2005).

**Advantages of living material**

- It became old as much as inanimate material. In addition, its structure becomes more and more resilient, because it has the ability to repair some damage by itself, and over time, it creates a very complex, effective and robust structure by itself.
- Plant material creates a better ecological effect compared to inanimate material. It also creates a more positive result in terms of the visual effect of the landscape.
- Plant roots grasp to soil and penetrate between the cracks of the rock blocks, allowing the surface soil to be retained. They ensure the retention of the surface soil in areas under threat of erosion, as well as the retention of soil dragged from top to bottom for any reason in sloping areas.

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- Above-ground parts of plants reduce the impact force of shallow raindrops; By reducing the speed of flowing water, they distribute it and prevent surface flow.
- By shading the soil on which it is located, it reduces its sensitivity to erosion by evaporation and protects the soil moisture.
- It protects the mechanical structures, reduces their load and enables them to be effective in smaller sizes.

### **Disadvantages of living material**

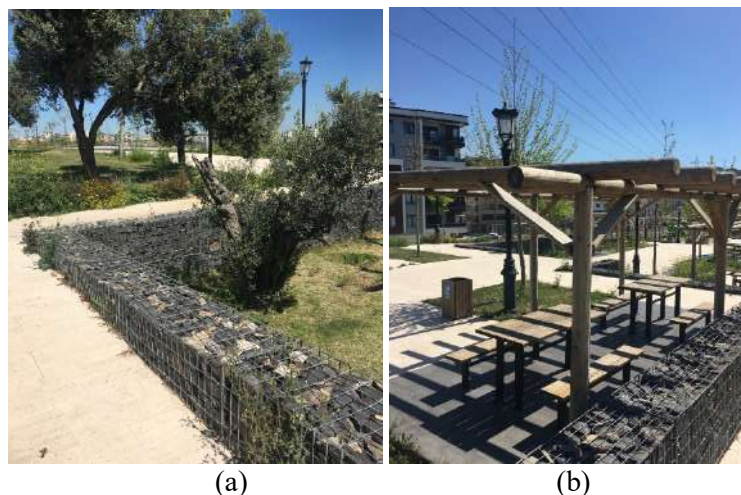
- Plants are the only possibility of living material; on the other hand, the possibilities of options are more in the applications of non-living materials. In addition, there are certain limitations of working in vegetative material such as soil structure, wind condition, planting and planting time of plants.
- In order to work with live material to be effective, a few years should pass and regular maintenance work is required.
- When working in live material, a larger area is usually needed (Yavuzşefik and Uzun, 2005).

## **MATERIAL METHOD**

In this study, living and non-living materials were examined with the original photographs and they were discussed. The study was supported by a literature search on living and non-living materials. The study area was İZMİR / Aliğa Yeni Mah. City Park Aiolis, Urban Memory and House of Memories.

## **RESULTS**

There was a gabion detail at the back entrance of the park in Figure 1, also there were picnic areas. The concept of sustainability, which had gained a significant place both in our country and in the world in recent years, was also of great importance for the construction industry. It is quite sufficient in terms of aesthetics, economics, durability and sustainability (Url 1). This detail, which was frequently used today, was in fact very compatible with the ecological system and nature, although the stones were inanimate materials. After all, landscape architects also bear the responsibility of developing an environment compatible with human beings.



**Figure 1.** Gabion detail (Original)

When the detail of the picnic area was examined, a wooden picnic table that was close to nature was used. Subsequently, a shading was considered and the shading element was made from the same wood. (Figure 1b) Creating spaces to meet the needs of the individual and establishing the continuity of these spaces (picnic plan is one of the duties of a landscape architect. Although the top cover elements look aesthetic, they were not functional in rainy and sunny weather.

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Some deterioration which was the wooden construction material was began to decay. Natural and artificial materials could not be considered independently of each other. For this reason, it is necessary to plan harmonious and sustainable partnerships between natural and artificial. In addition, Landscape architects are convicted of creating spaces where individual needs are met and ensuring the continuity of these spaces.



**Figure 2** Sculptural detailed fountain (Original)

People need the artificial environment as much as the natural environment. It was a fountain seen in Figure 3, but the tap part has not been made yet. Sculpture made of natural stone. Since it was close to the picnic area, it was highly developed in terms of functionality. Since water is the most basic need of living and human beings and it is alive, it is obvious that there is harmony with the living equipment element and the non-living equipment element. The living-non-living equipment elements were quite suitable in terms of both aesthetics and human-nature harmony in this campus area. The ergonomics and anthropometry used in the project overlap with these materials. The characteristics of used reinforcement elements (living and non-living) in this campus should be previously in the examination of the land (soil structure, climate, etc.). For example; In plants used as living materials, it should be known how tall and crown diameter the plant will make in the future.



**Figure 3.** Lighting element (Original)

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Undoubtedly, the most important element is the lighting element in inanimate materials. The lighting element is among the reinforcement elements connected to the infrastructure. Good lighting was important not only for our physical and mental health but also for our prestige (Turkey Ministry of National Education Art and Design: Lighting elements 2013, Ankara) and it was comfort. On a commercial basis, good lighting means good design. A good design brings cheapness and comfort. An architect uses economical, durable, portable, common materials to provide the basic needs of a person. Light was also one of the basic human needs. After examining the project area, a lighting element made in accordance with the standards. As seen in Figure 4, the park area was sufficient in terms of lighting. It was not compatible with nature because the material used was iron. Of course, it was not expected to use wood instead of iron, but using solar powered light could make this material more compatible with nature.



**Figure 4**

The elements of urban reinforcement areas and built for children's entertainment were generally plastic. However, plastic was not an element close to nature and compatible with nature. The most lifeless element in harmony with nature was wood. The one used in the city park in Figure 4. It was a wood-like plastic. Unlike the classical children's playgrounds, the children's play elements offered a different and innovative play opportunity for children, such as climbing, and there were also picnic and seating areas where their families will be very close.

Landscape architects generally prefer the most advantageous non-living material and the one closest to nature. In the simplest terms, living environments that bear the genetic heritage of nature, ie the effects of underground and aboveground dynamics; They create a living environment by minimizing the destruction of climate change, fossil fuels and natural resources. The advantage of plastic reinforcement elements is that it is more resistant to bad weather conditions than wood.

For example, iron will rust as it rains but wood can be worn out. Since the parents' trust concept overlaps with wood, generally wood or wood-like plastics are actively used. It is very important that game equipment is functional, aesthetic and ergonomic.

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**Figure 5.** Bridge used in the children's area

**Figure 6.** Close-up view of the bridge floor

Falling and injuring children on uneven ground was inevitable. In such rugged areas, the concept of design and creativity comes into play. As seen in the park- in Figure 8, a bridge was considered and implemented and when we examine it closely, it was seen that the floor of the bridge was real wood and the ropes were seen on the sides, it was also very strong. The advantage of this lifeless but natural wood material that was hard and was broken easily.



**Figure 7.** Floor covering (Original)

It is very important to lay floors suitable for climatic conditions. It is very important that a ground is solid. Slate stone with grass joints is generally used. However, wood with grass joints was used here. The disadvantage of this inanimate element was that it has some distortions. Wood has a high confidence effect on people. As seen in Figure 7, the harmony of the natural element, the grass, and the wood, which was the most compatible with nature, was observed. Since wood was very easily deformed, it was better not to use it as a floor element. (Perker et al., 2006). Because one of the disadvantages of this inanimate material was that it was absorbed a lot of moisture and is less durable.



**Figure 8.** Floor covering (Original)



**Figure 9.** Art view with flooring and podium stone (Original)

There was an unusual situation in Figure 9. Instead of grass joint, wood was accompanied by a geological heritage. However, this element is made of stones that require polishing and maintenance, it was not useful and durable compared to many stones. the harmony of the 2 inanimate elements can be seen. After the harmony of wood and travertine.

As Podium stone is healthy and environmentally friendly, it does not contain any structure that will affect human health. It is among the most used stones in landscape works and decorations and takes the first place. Among the advantages of the pebble stone used in Figure 14; Pebble stone was easier and more economical than other materials in terms of easy obtaining, application, cleaning and durability. A building material; It should be durable, easy to process, easy to carry, aesthetically-especially colour-compatible with other materials. The reason why podium stone was so preferred was that it was available in different colours and allows for processing and pattern formation. The advantages of this inanimate material were quite high, for example, it does not require the use of another material as filling material in flooring. The annual rainfall and temperature statistics of the area to be applied first of the artificial stream shown in Figure 14 are checked.



**Figure 10.** Authentic breeze of the artificial stream with podium stone (Original)



**Figure 11.** Waterfall at the head of the artificial stream **Figure 12.** Shading and seating element

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Among the urban furniture elements, benches and seating elements are considered as accessories that need to be arranged together with their visual and functional features. Shading, which is one of the most important reinforcement elements. Although the seating elements in our country lack shading, they are generally not sufficient in terms of comfort.

However, as seen in this park, both the seating element was wooden and its height was generally suitable for TS 12576 standards and ergonomic use. So it is anthropometric and ergonomically suitable. Since the park was still new, deterioration was not started due to climatic factors. Although we said that inanimate elements were not very compatible with nature, the use of wood provides a great advantage when used as a seating element. A sitting member; It was very important that it was made of few parts, its maintenance was easy and long-lasting, and it was resistant to external conditions and physical factors (impacts). As seen in Figure 16, it was combined with a plant box in the park and again showed the harmony of the reinforcement element and the plant, the harmony of living material and inanimate material.



**Figure 13.** First view of sitting and shading after application (Url 2)

In the design of the benches, the seating sections are mostly planned as wooden. Wood to be used for this purpose should be suitable for external environmental conditions. Since İzmir is located in the Mediterranean climate zone, it has a warm climate.

Therefore, the materials used were important. Wood protective paints and varnishes were used to conserve the benches from atmospheric influences. For shading was creativity in this project. Because the shading of both the sitting and the ground were the same material it was very functional. If the lighting unit could be built at the edge of the shading place, it would be better in terms of both aesthetics and economy (Yazici and Temizel, 2020).



**Figure 14.** Appearance of Living Materials (Original)

**CONCLUSION**

Living-non-living materials used in the area; Each of them has been tried to be implemented by making advantageous choices due to their usage areas, but when they come together, incompatibilities, lack of

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relation, and security problems arise due to their deficiencies. In such landscaping works where living and non-living materials were used together, while considering the advantages of the materials, the composition they come together should be examined at every step without ignoring. The selections to be made by considering the requirements and conditions will never be the only option. Problems with many such parameters will be suitable for his design; It is also the duty of landscape architects to analyze it in an ideal way, in balance and at an affordable cost.

In the consideration of park, the issues taken into consideration during the project and implementation phase were mentioned in the perspective of landscape architecture.

It was mentioned how the place and importance of all these issues. The effect of human beings, not only human beings but also the living things in nature, and how the living-non-living materials used adapt within the ecosystem. Again, these natural and artificial materials; It is discussed in terms of functionality, design, originality, and its advantages and disadvantages; The overlapping of these living-non-living materials, whose economical, ergonomic and anthropometric aspects were used, has been discussed.

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## Internet Resources

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