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USE OF GREEN ITEMS IN CITY FURNITURES

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ABSTRACT

Along with the developing technology, the requirements of the users are also increasing in the cities. Therefore, there is also an increase in the necessity of designs to meet the needs of users. The city, which is a combination of living and non-living materials, has many city furniture in order to meet the needs of the users. In urban furniture, which has a very wide area in terms of design, today's use of green items is also important. Sustainability, ecological and aesthetic concerns are important parameters that enable green items to be integrated into urban furniture. Especially nowadays, the sustainability awareness which is frequently mentioned has taken its place in the city furniture as well as in many places. Within the context of this study, nowadays urban furniture designed with ecological concerns are examined. Urban furniture, sitting units, lighting elements, canopy elements and bus stops are examined in four main sections. The result of the study emphasizes the importance of sustainable designs and urban aesthetics of urban furniture designed with ecological concerns and suggestions for future works.

Key words: City furniture, Sustainable design, Ecological furniture, Green Items

ÖZET

Gelişen teknolojiyle beraber kentlerde kullanıcıların gereksinimleri de artmaktadır. Dolayısıyla kullanıcıların ihtiyaçlarını karşılayacak tasarımların gerekliliğinde de artışlar olmaktadır. Canlı ve cansız materyallerin birleşiminden oluşan kentler, kullanıcıların ihtiyaçlarını giderebilmek amacıyla birçok kent mobilyaya sahiptir. Tasarım açısından oldukça geniş bir alana sahip olan kent mobilyalarında, günümüzde yeşil öğelerin kullanımı da önemli bir yere sahiptir. Sürdürülebilirlik, ekolojik ve estetik kaygılar yeşil öğelerin kent mobilyalarına entegre olmasını sağlayan önemli parametreler arasındadır. Özellikle günümüzde sıklıkla bahsedilen sürdürülebilirlik bilinci birçok alanda yerini aldığı gibi kent mobilyalarında da yerini almıştır. Yapılan bu çalışma kapsamında günümüzde ekolojik kaygılar ile tasarlanan kent mobilyaları incelenmiştir. Kent mobilyaları; oturma birimleri, aydınlatma elemanları, otobüs durakları ve örtü elemanları olmak üzere 3 ana başlıkta incelenmiştir. Çalışma sonucunda ekolojik kaygılar ile tasarlanan kent mobilyalarının sürdürülebilir tasarımlar ve kent estetiği açısından önemli vurgulanıp, ileride yapılacak olan çalışmalar için önerilerde bulunulmuştur.

Anahtar kelimeler: Kent mobilyaları, Sürdürülebilir tasarım, Ekolojik mobilyalar, Yeşil Öğeler.

1. INTRODUCTION

The city could be explained as a special case of human settlements within space and time. In order to describe this case, it is initially necessary to define human settlements and all elements and variables that characterize this type of settlement, and then to define when these variables take which values separately and in conjunction for a human settlement to be defined as a city (Suher, 1991). Urban spaces in the public sphere are environments where common occupation spaces and related special furniture are present based on the cultural, physical and psycho-social needs of individuals. Urban furniture are elements that are designed to meet several needs of the occupants in any public and urban space such as

leisure, recreation and transportation, and placed based on the space, emphasizing urban identity (Bayramoğlu and Özdemir, 2012).

Furniture elements are indispensable elements of life. They are among the significant elements that render the space habitable and meaningful and meet the functional and aesthetic needs of individuals. All details used to shape and render a city functional including the lighting elements, the trash bins, indoor or outdoor housing spaces and elements, plant cases, flooring and pavement materials, fountain and water elements, warning and direction signs, bus stops and telephone booths are considered as furniture elements (Bulut et al. 2008).

Urban furniture includes products designed to meet the evolving needs of the users due to the urban concept and as a result of certain processes. Thus, it was observed that it has been defined in various forms in the literature. Literature review would demonstrate that they have been widely used in the UK, then in European countries and America, and became significant elements in urban architecture within a short period of time. Urban furniture production, conducted by artisans as single elements in early times, was industrialized due to mass requirements due to urbanization. It was observed that the initial examples of urban furniture as industrial products were the gas lamps used for street lighting in England (Feyizoğlu, 2008).

In the literature, urban furniture were classified with various methods. Based on their functions, urban furniture are classified in nine categories (Harris & Dines, 1998; Gürsoy S, 2011) (Table 1).

Table 1. Urban Furniture Classification Based on Function (Harris & Dines, 1998; Gürsoy S, 2011).

N	Function	Units
1	Flooring elements	concrete, stone, wood, brick, asphalt etc.
2	Seating elements	bench, chair, group seating elements
3	Lighting elements	road and field illuminators
4	Border elements	pedestrian and traffic barriers etc.
5	Signs and information	routers, locators, information communication boards
6	Sales units	kiosks, kiosks etc.
7	Water elements	fountain, ornamental pool, canals, fire hydrant etc.
8	Cover elements	stalls, shades, pergolas
9	Trash cans	

Materials used in the production of urban furniture are classified as wooden material, metal material, plastic material, and concrete, glass and composite materials (Kurtoğlu and Dilik, 2016).

The rapid urbanization in Turkey, changes in living conditions, social structure and technological developments affect urban development and outlook. Social life that changes based on technological, economic and cultural conditions concurrently affects the urban components and furniture (Olgun and Yilmaz, 2015).

The furniture elements are formed and develop under factors such as the social and cultural behavioral traits of the occupants, their expectations from the object, visual and aesthetic value judgments and functional, semantic requirements within the environmental order. As a part of the system founded on urban identity, one of its distinctive and supporting elements, furniture elements should sustain within the city both technically and visually. This sustainability is not because it is a part of a system, but because it is a “language that is comprehensible and available to all” (Bayrakçı, 1991).

The outlook of urban furniture created as a result of a certain organization should be integrated with the present environment, and on the other hand, it should reflect a visual meaning within the context of

time-space relationship by adapting to the contemporary life. Thus, the urban furniture design should connect to the city or urban section where they are located (Ertaş, 2017).

There is several urban furniture in physical living spaces based on different objectives, needs and desires. This furniture provide urban identity, adapt and provide comfort, aesthetic and functional facilities to urban life (Tek, Acar and Sahin, 2017). Urban furniture includes all objects that facilitate the individual and social life within the urban texture, provide communication among individuals, assign aesthetical and functional aspects to the space, define and complete the space with different features. Thus, urban furniture is not only important for functional purposes, but also provides an urban identity (Güremen, 2011).

In general terms, sustainability means the balanced use of resources before they become non-renewable and extinct to preserve them for the use of future generations. The concept of sustainability became popular in recent years and made rapid progress all over the world. It led to comprehensive development in several areas including discovery of alternative energies against environmental pollution, service and system design, recycling measures, measures to facilitate the collection of waste material and waste material design, the use of local and natural materials in underdeveloped nations and re-use of craft products (Şatır, 2015).

Sustainable production is the creation of future-oriented production systems by creating goods and services processes with environment-friendly or recyclable material and using clean technologies (URL-1). Today, sustainable furniture production is one of the results of globalization of green world awareness. In the industrial age, furniture industry is one of the main causes of ecological pollution similar to all industries. Thus, it is obvious that sustainable production should be prioritized in the furniture industry as well.

Since design is a wide concept on its own, it requires more comprehensive definitions when it is considered in conjunction with sustainability. It is observed that products and materials have chains of life cycles before and after the design process. Thus, for the sustainability of life and the protection of future environments for human life, it is necessary to foresee and prepare a safe environment for urgent and primary concerns such as air, water, food, shelter, etc. (Şatır, 2015).

The criteria for sustainable furniture are the sum of knowledge that a furniture designer should possess. These criteria emerged based on the information obtained in previous research. Factors behind the criteria are as follows (Karaca, 2018):

- Knowledge on life-cycle design standards acquired via worldwide research
- Knowledge on sustainable furniture standards developed by independent organizations and ISO 14000 standards.
- Furniture production standards developed by the ministries and concerned parties in Turkey.

The Aim of the Study

The present study aimed to analyze the urban furniture designed with ecological concerns with respect to sustainability and provide furniture examples for future studies. In the present study, urban furniture was scrutinized under 4 main topics: sitting units, lighting elements cover elements and bus stops. The study findings emphasized the significance of urban furniture designed with ecological concerns for sustainable design and urban aesthetics and recommendations are presented for future studies.

2. FINDINGS

In this study, the common parameters of the four main headings were examined. The conditions of the parameters for each furniture are given in the tables. The findings obtained from the study are explained. Most of the results obtained from the seating elements; “*green elements, natural material, natural form effect, plant use, energy production, pet-friendly design*” parameters effectively create (Table 2-3).

Table 2. Seating Elements Examined Within the Scope of the Study



Seating elements			
Example 1 (URL-2)	Example 2 (URL-3)	Example 3 (URL-4)	Example k 4 (URL-5)
			
Example 5 (URL-6)	Example 6 (URL-7)	Example 7 (URL-8)	Example 8 (URL-9)
			
Example 9 (URL-9)	Example 10 (URL-10)	Example 11 (URL-11)	Example 12 (URL-12)
			

Table 3. Status of the Seating Elements Examined in Relation to Parameters

Seating elements												
Parameters	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12
Green elements												
Natural material												
Solar panel												
Natural form effect												
Waste water use												
Use of rain water												
Bicycle park possibility												
Animal friendly design												
Plant use												
Energy generation												

Other furniture examined are the lighting elements in this study. According to the findings obtained, most of the lighting elements; “*solar panel, natural form effect, rain water usage, energy production*” parameters (Table 4-5).

Table 4. Lighting Elements Examined Within the Scope of the Study












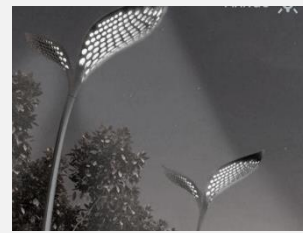
Oturma Birimleri			
Example 1 (URL-13)	Example 2 (URL-14)	Example 3 (URL-15)	Example 4 (URL-16)
			
Example 5 (URL-17)	Example 6 (URL-18)	Example 7 (URL-19)	Example 8 (URL-20)
			
Example 9 (URL-21)	Example 10 (URL-22)	Example 11 (URL-23)	Example 12 (URL-24)
			

Table 5. Status of the Lighting Elements Examined in Relation to Parameters

Lighting Elements												
Parameters	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12
Green elements												
Natural material												
Solar panel												
Natural form effect												
Waste water use												
Use of rain water												
Bicycle park possibility												
Animal friendly design												
Plant use												
Energy generation												

Other furniture examined are the bus stops in this study. According to the findings obtained, most of the bus stops; “green elements, natural material, solar panel, natural form effect, bicycle parking possibility, plant use, energy production” parameters (Table 6-7).

Table 6. Bus Stops Examined Within the Scope of the Study**Table 7.** Status of the Bus Stops Examined in Relation to Parameters

Bus stops												
Parameters	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12
Green elements												
Natural material												
Solar panel												
Natural form effect												
Waste water use												
Use of rain water												
Bicycle park possibility												
Animal friendly design												
Plant use												
Energy generation												

Other furniture examined are the cover elements in this study. According to the findings obtained, most of the cover elements; “solar panel, energy production, natural form effect, plant use, natural form effect” parameters (Table 8-9).

Table 8. Cover Elements Examined Within the Scope of the Study






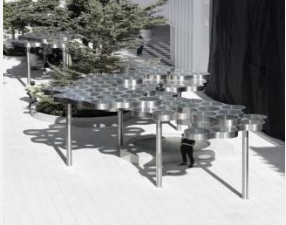






Cover elements			
Example 1 (URL-37)	Example 2 (URL-38)	Example 3 (URL-39)	Example 4 (URL-40)
			
Example 5 (URL-41)	Example 6 (URL-42)	Example 7 (URL-43)	Example 8 (URL-44)
			
Example 9 (URL-45)	Example 10 (URL-46)	Example 11 (URL-47)	Example 12 (URL-48)
			

Table 9. Status of the Cover Elements Examined in Relation to Parameters

Cover elements												
Parameters	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12
Green elements												
Natural material												
Solar panel												
Natural form effect												
Waste water use												
Use of rain water												
Bicycle park possibility												
Animal friendly design												
Plant use												
Energy generation												

3. CONCLUSION AND RECOMMENDATIONS

Within the scope of this study, the city furniture in the city has been examined four main headings: seating elements, lighting elements, bus stops, cover elements". In this context, 4 main headings were examined with 10 sub-parameters and 12 examples. In total, 48 furniture with 4 main headings were examined (Table 2-3-4-5-6-7-8-9).

Table 10. All Parameters Examined and the Results of the Examples

Parameters	Furnitures			
	Seating elements Table (2-3)	Lighting Elements Table (4-5)	Bus stops Table (6-7)	Cover elements Table (8-9)
Green elements				
Natural material				
Solar panel				
Natural form effect				
Waste water use				
Use of rain water				
Bicycle park possibility				
Animal friendly design				
Plant use				
Energy generation				

Preference status *	Maximum	Many	Less	Minimum
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The results obtained from these investigations are listed as follows; (The parameters examined within the scope of the study are in line with the data that can be obtained within the scope of these examples. The information about the examples examined is as much as possible via internet/literatures.)

- Green elements are seen at most "seating elements" and "bus stops" (Table 3-7).
- Green elements are seen at least "lighting elements" (Table 4-5).
- Natural materials are seen at most "seating elements" and "bus stops" (Table 3-7).
- Solar panels are seen at most "lighting elements" and "bus stops" (Table 5-7).
- Solar panels are seen at least "cover elements" and "seating elements" (Table 3-9).
- Natural form effects are seen at most "seating elements" and "lighting elements" (Table 3-5).
- Natural form effects are seen at least "bus stops" and "cover elements" (Table 7-9).
- Nearly waste water use is no maximum values are seen these furnitures. (Table 2-3-4-5-6-7-8-9).
- The use of rainwater has not reached almost any parameter compared to the most used.
- The highest ratio among these ratios was lighting units (Table 4-5).
- Bike parking is not available in almost all parameters. Among these ratios, the highest rate was "bus stops" (Table 6-7).
- Pet friendly designs were obtained in most in the "seating elements" (Table 2-3).
- Use of green elements are seen at most, "seating elements" and "bus stops". This use is got at least in "covering elements" and "lighting units" (Table 3-5-7-9).
- Energy production are seen at most "lighting elements", "bus stops" and "cover elements" (Table 5-7-9). The parameter has the minimum ratio in the "seating element" parameter. (Table 2-3).

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