INTERNATIONAL JOURNAL OF ELECTRONICS; MECHANICAL and MECHATRONICS ENGINEERING Vol.4 Num 3 pp.(757 - 772)

EVALUATION OF STREET FURNITURE ACCORDING TO BASIC DESIGN PRINCIPLES

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Abstract
In the urban context, it is important to create more comfortable and livable environments with proper planning, design and application. Because aesthetic considerations are of more importance today, designing urban furniture to give a more beautiful appearance to cities is of high priority; designers and those working in related disciplines must be careful to observe these principles throughout the design process. This paper describes research conducted to review the aesthetic principles involved and how they relate to urban furniture.

Keywords: Urban Environment, Street Furniture, Aesthetic, Basic Design, Principles of Arrangement.

1. INTRODUCTION

In urban design, arrangements of elements that create visual coherence produce eye-catching and memorable images. As elements complementing the image of a city, urban furnishings play an active role in urban design as a whole, whether for their functional or aesthetic values [1]. Integrating urban furniture with the architectural characteristics of a space is important in terms of its acceptability and likeability to the people who use it. When harmoniously designed and put together, seating units, trash cans, signboards, lighting units and similar furnishings have a positive visual effect on urban space; well designed urban furniture that reflects or complements a city can become symbolic of the city over time. Examples of this are the red telephone booths of London and the lighting elements on the Notre Dame Bridge in Paris (Figure 1) [2; 3].

Figure 1. London, England [URL 1]; Paris, France [URL 2]

In the process of designing and/or selecting urban furniture, architectural, natural and social environments and climate must be evaluated carefully. In particular, the architectural environment in which furnishings are being used can be helpful to the designer in deciding on the details of dimensions, design, color, materials, features, and construction. In addition, for urban furniture to be used effectively, it has to be ergonomic, feature measures to prevent injuries that might be incurred by users, and have periodic maintenance work done on it [4].

2. DESIGN PRINCIPLES USED FOR EVALUATING URBAN FURNITURE

In man-made spaces, the environment is made up of the elements, forms, textures and colors that are found there. It is important that there is unity between the aesthetic values of the space and the product [2]. Aesthetic perceptions, which vary according to each individual's own life perspective, together with cultural commonality, play a role in shaping the artificial elements that form part of a city's identity [5].

It is important to ensure that the proper relationship is established between items of urban furniture, each taken as a design product, and with the place where they will be located [6]. Things that are effective in giving an identity to an area–such as symbolic aspects, psychological effects, materials, elements of texture and color, accessories, promotional elements, natural balances, and numerous other elements and characteristics that give similar peacefulness and pleasure to people from a psychological and biological perspective–enhance the quality of spaces [7], and at the same time create spaces that are comfortable and aesthetically pleasing [8; 9].

Urban furniture must be designed according to certain standards from the perspective of anthropometric measurements; attention must be paid to functional and aesthetic characteristics (line, measurement, form, color, texture, etc.); and the design must be unique [10; 11]. And it is important that the way urban furniture is to be used is easily understandable [12].

For a successful sustainable perception and usage of spaces, the design elements must be emphasized, and individuals' sense of familiarity, reactions and gut instincts must be thought of as responses [13].

The criteria that affect to what extent urban furniture design makes a difference or how much it is liked by users have been determined as follows: color harmony, dimensional/proportional balance, functional suitability, suitability of materials; being maintained/clean, modern, new; having historical qualities, referring to history; being different, attractive, interesting, striking, original/unique; in a good location, in keeping with the surroundings or clashing with them; being meaningful and monumental, being symbolic, creating visual richness [14].

Form, color and texture, as well as materials and functionality are thought to be effective in urban furniture design. Each of the item have own characteristics while designing in urban areas.

2.1. Form

The form determines the function, dimensions and material. The form of an object derives from the functions related to

it and what service it is expected to provide (Figure 2). It is important that the way urban furniture is used is easily understood. The criteria for the duration of perception and perception itself include a sense of security as another effective factor [12].

Figure 2. Hamburg, Germany [URL 4]

Form also plays an important role in determining the character of a place. The character of a place or the felt sense of identity is produced by the characteristics of form, materials, texture and color, and also the cultural mixtures created by people over time. For example, if we think about lighting elements, we see differences in the forms of lighting and the way they are used in different spaces in a city. Different kinds of lighting are used to illuminate roads for vehicles, pedestrian paths, squares, parks, gardens and green areas [13]. There will be different formal characteristics in the lighting elements that provide these kinds of illumination (Figure 3).

To take another example, if we consider the forms of seating elements, we see that these forms affect how they are used. Seating elements for two or three people (Figure 4, left) provide alternatives for people who want to sit alone, while seating areas designed with curvilinear forms (Figure 4, right) encourage people to engage in conversation more and be social.

Figure 3. London, England [URL 5]; Budapest, Hungary [URL 6]

2.2. Color

Color, which serves aesthetic purposes and is also part of the system of perception, determines the quality of a space, adds a separate depth and dimension to the arrangement of urban spaces by foregrounding the materials, design elements and furnishings that are used [23].

Figure 4. Victoria, Australia [URL 7]; Bereda, Netherland [URL 8]

For urban furniture to perform its functions, it must be visible and with suitably chosen colors [24]. Each item of urban furniture should have, in contrast to its environment, strong chromatic and bright colors (Figure 5). In this way, it can easily be recognized and understood by people who use it, especially the visually challenged [25]. For example, trash cans, from their color, should be noticeable from far off. Once trash can colors have started being used, these colors should be kept so that the understanding of them remains the same. Bright colors are appropriate in terms of their visibility, while dark colors and natural colors are more resistant to rust and misuse, but visually are not easily visible [26].

Figure 5. Vienna, Austria [URL 11]

2.3. Texture

Texture refers to a surface where at each level similar or repeated elements from lower levels are found. Factors which are effective in the perception of texture are: the strength of the light, its angle of incidence, and the shadow it creates; distance (heavily textured elements are perceived from further away in comparison to lightly textured elements); and material differences. Urban furniture, texture and conceptual forms are closely related to each other. Texture is important in the design for both technical and aesthetic reasons (Figure 6).

Figure 6. Warsaw, Poland [URL 12]; Sidney, Australia [URL 13]

Visually, it creates interesting surfaces and hides small faults [27]. In creating texture, using a variety of materials is of the utmost

importance [28]. Besides physical and visual attributes, texture makes a substantial contribution to the structure as well as to the material functionality of the product [29]. It is natural for quite different factors to be taken into consideration in the design of urban furniture. Among these are public aspects such as traditions, preconceptions, and historical texture, psychological aspects such as the resulting perceptions, aspects of meaning conveyed by the characteristics of the materials used, and aesthetic aspects brought in by the dimensions of the design.

2.4. Materials

Urban furniture may show differences and innovations during the design process, as it is affected by the development through technology of a diversity of materials and the currents of fashion. In addition to looking at the function of a product in the design, attention must be paid when selecting materials to the visual effect that one wants to create in the product that is being designed. A diversity of materials enables the creation of different forms, enhances the visual quality of the products, and enriches the design [17]. To ensure that urban furnishings can endure environmental conditions, attention must be paid during the design stage to factors like the correct choice of materials and their placement. In the choice and design of furniture, climatic factors like daylight, expansion and contraction, wind stress, moisture, and at the same time salt, ice or frost, must be taken into account. The best designs use strong, simple shapes and natural materials [18; 19].

With regard to the characteristics of the material used, the stability of the product and the psychological effects it creates are important. Concrete seating units, when compared to wooden ones of the same dimensions, have a massive and heavy look [12]. The reasons for selecting a particular material for urban furniture can be summed up as: appropriateness for its function, fitting in with environmental constraints, and suitability for giving form [20]. Urban furniture in areas with a fire hazard should be made from materials like metal, brick and stone, not from wood, which is potentially flammable [12; 21]. The materials most used in urban furniture are steel and wood; alternatives are stone, concrete, recyclable plastic and glass, etc (Table 1). While each of the materials described above can be used on their own in furniture design, more than one in combination with others can also be used (Figure 7). The choice of materials varies depending on the content and the restrictions on design; important issues, for example, are the furniture's resistance to vandalism, the costs involved, and how frequently it will be used.

Figure 7. Denver, United State of America [URL 10]

2.5. Functionality

It is possible to have spaces which have quality and an identity and give pleasure to people, by placing urban furniture in them which is functional, aesthetic, and economically produced, which suits its purpose and is used properly and habitually [15].

Table 1. The materials used in urban furniture[22].

Steel	Because steel is characteristically versatile in its uses, strong and lightweight, and can take any shape desired, it is the most preferred material. It is durable, and resistant to rust and to impact; and requires little maintenance. It is relatively cheap compared to other materials, because it can be reproduced through recycling.
Wood	This is one of the most preferable materials. It is a natural material, which unlike other materials, feels hot when the weather is cold, and cold when the weather is hot. Its disadvantage is that unlike metallic materials, it takes longer to dry after rain, and needs more maintenance. It has low resistance to vandalism.
Concrete	Because concrete materials are heavy, there may be no need to install them. They are resistant to vandalism, apart from spray-paint. Concrete is a durable and aesthetically attractive material.
Stone	Stone, like concrete, is durable and resistant to vandalism. It is difficult to dry after rain, and when aesthetic concerns are considered, it offers only limited design possibilities.
Plastic	Recyclable materials are generally made of plastic, which presents a smooth surface and appearance. Compared to wooden materials, it is more durable, needs less maintenance, and is cheaper in the long term.

For urban furniture to be identified as functional, the most important factor is that it should be in keeping with human ergonomics [12]. In its design, forms should be chosen with regard to their function, to suit their purposes. If a unique urban furniture design does not convey this functionality, then it can cause problems in the space where it is located (Figure 8).

Figure 8. Vancouver, Canada [URL 3]

In urban public spaces, to meet people's needs, collectively used furnishings that have more than one function are used in diverse ways. We can categorize urban furniture items in terms of their functions as follows: for protection, e.g. traffic lights to control the flow of traffic, traffic signs, lighting elements; for resting, e.g. seating elements; for cleaning, e.g. trash cans; for pleasure, e.g. urban furniture for recreation and children's games; for sales and shopping, e.g. snack bars, ticket offices, automatic sales machines; for communication, e.g. telephone booths; for accommodation, e.g. shady spots, awnings, bus stops; for guidance, e.g. flooring overlay elements, street signs, underpasses and overpasses; for restricting, e.g. fences, railings, walls, flowerbeds, protective materials for tree roots; for providing information, e.g. notice and advertising boards, clock towers in squares; and for decoration, e.g. flower planters, sculptures and waterworks.

3. FIELD WORK/RESEARCH

This study examined the factors that are thought to be effective in urban furniture design, including elements of form, color and texture, as well as materials and functionality. In addition, the effects of these concepts on people was measured by means of a questionnaire study.

3.1. Research Methods

With the results of the research, a questionnaire study was conducted in order to evaluate the aesthetic criteria for urban furniture. The targeted information was divided into two groups in the questionnaire form. In the first group, the aim was to determine the objective variables of the subjects, such as the gender, age, marital status, income, educational status, and occupation of the participants. In the second group, individuals' principles and psychological perceptions of unity, harmony, interestingness, simplicity and complexity, emphasis, balance, and rhythm were studied; and the relationships between their aesthetic preferences and principles were researched. In order to set up a relationship between urban furniture and aesthetic perceptions, and with the preconceived idea that an aesthetic is more perceptible to educated people, a sample of 200 people from high schools and universities was used as a subject group for the questionnaire study.

3.2. Research Hypotheses

In light of the theoretical information mentioned in the previous sections, 11 hypotheses were identified to evaluate urban furniture in terms of aesthetical organizational principles; the correctness of these hypotheses was studied according to the participants' gender differences, as determined in the questionnaires.

H1: People would find unity in design, more aesthetically pleasing than interestingness and harmony.

H2: People would find simple designs more aesthetically pleasing than complex designs

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H3: The presence of elements like sculptures or fountains would increase the frequency of use of a space.

H4: People would find well-balanced designs more aesthetically pleasing.

H5: People would find rhythmic designs more aesthetically pleasing.

H6: It was thought that people would greatly prefer designs which were at the same time functional and aesthetic to those that were only either functional or aesthetic.

H7: People would find urban furniture more aesthetically pleasing in geometric forms than in natural forms.

H8: People would find urban furniture more aesthetically pleasing in wood than in concrete or metal.

H9: People would find urban furniture more aesthetically pleasing in its natural colors than if it was painted.

H10: People would find urban furniture more aesthetically pleasing if it were fine textures-surfaces than if it had a course surfaces.

H11: People would find urban furniture more aesthetically pleasing if it had smooth surfaces than if it had rough surfaces.

3.3. Method of Analysis

Once the questionnaires were filled out, the data was coded according to the answers

received from each subject. Using the Excel (PC) statistical analysis program, the data were analyzed using the relevant basic statistical processes, the relationships between the data were also analyzed; and with the information obtained from the questionnaires, they were subjected to a chi-squared significance test.

3.4. Research Findings

At this stage, first of all, the socio-demographic characteristics of the users of sample spaces were determined. Later, the results were studied to determine whether or not meaningful relationships could be found between the survey participants' aesthetic understanding and their perceptions of urban furniture. From the participants' responses, their socio-demographic characteristics were determined as shown below (Table 2).

The survey participants' gender distribution was 52.5% male and 47.5% female. Their age distribution was as follows: 52% in the 18-25 age group, 26% in the 26-30 age group, 4% in the 31-35 age group, 2% in the 36-40 age group, 16% in the 41-60 age group. Of the participants, 20% were married and 80% single. In terms of income, 14% were earning minimum wage; 16% a monthly income of 850-2000TL; 18% a salary of 2000-4000TL; 6% more than 4000TL; and 46% had no income. In terms of educational level, 16% identified themselves as high school graduates, and 84% as university graduates. As for occupation 12% of the participants were unemployed, 10% laborers, 6% civil servants, 40% students, 22% employed in the private sector, and 10% self-employed or freelance.

Table 2. Socio-demographic Distribution

	Number of Individuals	**Frequency Distribution (%)**
Gender		
Male	105	52.50
Female	95	47.50
Age Group		
18-25	104	52
26-30	52	26
31-35	8	4
36-40	4	2
40-60	32	16
Marital Status		
Single	160	80
Married	40	20
Monthly Income		
None	92	46
850TL (minimum wage)	28	14
850 TL – 2000 TL	32	16
2000 TL – 4000 TL	36	18
above 4000 TL	12	6
Educational Level		
University	168	84
High School	32	16
Occupation		
Not working (Unemployed)	24	12
Student	80	40
Private sector	44	22
Self-employed/freelance	20	10
Laborer	20	10
Civil servant	12	6

Table 3. Results of the chi-squared analysis for participants' perceptions of aesthetic, unity, harmony and interest

SEX	Aesthetic Unity	Interest	Harmony	Grand Total
Men	69	30	6	105
Women	41	36	18	95
Grand Total	**110**	**66**	**24**	**200**
Aesthetic	Unity	Interest	Harmony	Grand Total
Men	57.75	34.65	12.6	105
Women	52.25	31.35	11.4	95
Grand Total	110	66	24	200
			P-Value	0.001356468*

*P- Value < 0.05 is statistically highly significant.

According to the chi-squared significance test, a majority of participants found unity in design aesthetically pleasing (Table 3). Secondly, participants found interestingness; and third, harmony, aesthetically pleasing. On this basis, Hypothesis 'H1- People would find unity in design, more aesthetically pleasing than interestingness and harmony' was confirmed.

According to the chi-squared significance test, a majority of participants found complex concepts aesthetically pleasing (Table 4). On this basis, Hypothesis 'H2- People would find simple designs more aesthetically pleasing than complex designs' was ruled out.

According to the chi-squared significance test, a majority of participants indicated that the frequency of use of a space would increase with the presence of elements like sculptures or fountains (Table 5). On this basis, Hypothesis 'H3- The presence of elements like sculptures or fountains would increase the frequency of use of a space' was confirmed.

Table 4. Results of the chi-squared analysis for participants' perceptions of aesthetic, simplicity, and complexity

SEX	Aesthetic Minimal	Complicated	Grand Total
Men	38	67	105
Women	59	36	95
Grand Total	**97**	**103**	**200**
Aesthetic	Minimal	Complicated	Grand Total
Men	50.925	54.075	105
Women	46.075	48.925	95
Grand Total	97	103	200
		P-Value	0.000250285*

*P- Value < 0.05 is statistically highly significant.

Table 5. Results of the chi-squared analysis for participants' perceptions of accentuated elements

SEX	Aesthetic Yes	No	Grand Total
Men	73	32	105
Women	84	11	95
Grand Total	**157**	**43**	**200**
	Yes	No	Grand Total
Men	82.425	22.575	105
Women	74.575	20.425	95
Grand Total	157	43	200
		P-Value	0.001160061*

*P- Value < 0.05 is statistically highly significant.

Table 6. Results of the chi-squared analysis for participants' perceptions of aesthetic and balanced or unbalanced elements

SEX	Aesthetic Balance	Unbalance	Grand Total
Men	80	25	105
Women	51	44	95
Grand Total	**131**	**69**	**200**
	Balance	Unbalance	Grand Total
Men	68.775	36.225	105
Women	62.225	32.775	95
Grand Total	131	69	200
		P-Value	0.00082698*

*P- Value < 0.05 is statistically highly significant.

According to the chi-squared significance test, a majority of participants indicated that they found balanced designs more aesthetically pleasing (Table 6). On this basis, Hypothesis 'H4- People would find well-balanced designs more aesthetically pleasing' was confirmed.

According to the chi-squared significance test, a majority of participants indicated that they found rhythmic designs more aesthetically pleasing (Table 7). On this basis, Hypothesis 'H5- People would find rhythmic designs more aesthetically pleasing' was confirmed.

Table 7. Results of the chi-squared analysis for participants' perceptions of aesthetic and rhythmic or non-rhythmic elements

SEX	Aesthetic Rhythm	Without Rhythm	Grand Total
Men	52	53	105
Women	27	68	95
Grand Total	**79**	**121**	**200**
	Rhythm	Without Rhythm	Grand Total
Men	41.475	63.525	105
Women	37.525	57.475	95
Grand Total	79	121	200
		P-Value	0.002298891*

*P- Value < 0.05 is statistically highly significant.

Table 8. Results of the chi-squared analysis for participants' perceptions of aesthetics and functionality

SEX	Aesthetic Aesthetic	Function And Aesthetic	Function	Grand Total
Men	8	63	34	105
Women	25	34	36	95
Grand Total	**33**	**97**	**70**	**200**
	Aesthetic	Function And Aesthetic	Function	Grand Total
Men	17.325	50.925	36.75	105
Women	15.675	46.075	33.25	95
Grand Total	33	97	70	200
			P-Value	0.000200701*

*P- Value < 0.05 is statistically highly significant.

According to the chi-squared significance test, a majority of participants indicated that they preferred urban furniture that was at the same time functional and aesthetically pleasing (Table 8). On this basis, Hypothesis 'H6- It was thought that people would greatly prefer designs which were at the same time functional and aesthetic to those that were only either functional or aesthetic' was confirmed.

According to the chi-squared significance test, a majority of participants indicated that they found natural forms more aesthetically pleasing (Table 9). Secondly, they found geometric forms; and third, geometric and natural forms together, aesthetically pleasing. On this basis, Hypothesis 'H7- People would find urban furniture more aesthetically pleasing in geometric forms than in natural forms' was confirmed.

According to the chi-squared significance test, a majority of participants indicated that they found wood and mixed materials more aesthetically pleasing (Table 10). On this basis, Hypothesis 'H8- People would find urban furniture more aesthetically pleasing in wood than in concrete or metal' was ruled out.

Table 9. Results of the chi-squared analysis for participants' perceptions of aesthetics and form

SEX	Aesthetic Geometric	Geometric and Natural	Natural	Grand Total
Men	59	7	39	105
Women	28	7	60	95
Grand Total	**87**	**14**	**99**	**200**
	Geometric	Geometric and Natural	Natural	Grand Total
Men	45.675	7.35	51.975	105
Women	41.325	6.65	47.025	95
Grand Total	87	14	99	200
			P-Value	0.000542643*

*P- Value < 0.05 is statistically highly significant.

Table 10. Results of the chi-squared analysis for participants' perceptions of aesthetics and material

	Aesthetic				
SEX	Wood and Mix	Wood	Plastic	Mix	Grand Total
Men	69	18	7	11	105
Women	38	37	7	13	95
Grand Total	**107**	**55**	**14**	**24**	**200**
	Wood and Mix	Wood	Plastic	Mix	Grand Total
Men	56.175	28.875	7.35	12.6	105
Women	50.825	26.125	6.65	11.4	95
Grand Total	107	55	14	24	200
				P-Value	0.0016152*

*P- Value < 0.05 is statistically highly significant.

According to the chi-squared significance test, a majority of participants indicated that they found urban furniture in natural colors more aesthetically pleasing (Table 11). The analysis also showed that secondly, they found painted elements aesthetically pleasing. On this basis, Hypothesis 'H9- People would find urban furniture more aesthetically pleasing in its natural colors than if it was painted' was confirmed.

According to the chi-squared significance test, a majority of participants indicated that they found urban furniture with fine textures more aesthetically pleasing (Table 12). The analysis also showed that secondly, they found course textures; and third, combined textures aesthetically pleasing. On this basis, Hypothesis 'H10- People would find urban furniture more aesthetically pleasing if it were fine textures-surfaces than if it had a course surfaces' was confirmed.

Table 11. Results of the chi-squared analysis for participants' perceptions of aesthetics and color

	Aesthetic		
SEX	Colored	Natural	Grand Total
Men	27	78	105
Women	44	51	95
Grand Total	**71**	**129**	**200**
	Colored	Natural	Grand Total
Men	37.275	67.725	105
Women	33.725	61.275	95
Grand Total	71	129	200
		P-Value	0.002361784*

*P- Value < 0.05 is statistically highly significant.

Table 12. Results of the chi-squared analysis for participants' perceptions of aesthetics and fine or course texture

	Aesthetic			
SEX	Fine and Course	Fine	Course	Grand Total
Men	14	51	40	105
Women	21	59	15	95
Grand Total	**35**	**110**	**55**	**200**
	Fine and Course	Fine	Course	Grand Total
Men	18.375	57.75	28.875	105
Women	16.625	52.25	26.125	95
Grand Total	35	110	55	200
			P-Value	0.001598285*

*P- Value < 0.05 is statistically highly significant.

According to the chi-squared significance test, a majority of participants indicated that they found urban furniture with rough textures more aesthetically pleasing (Table 13). The analysis also showed that secondly, they found smooth textures; and third, both, aesthetically pleasing. On this basis, Hypothesis H11- People would find urban furniture more aesthetically pleasing if it had smooth surfaces than if it had rough surfaces - was confirmed.

4. CONCLUSIONS

Throughout history, aesthetic concerns have been the primary concern in designing spaces. A certain beauty is sought in a space, and positive perception of the space increases its comfort, and therefore its habitability. If urban furniture is designed in unity with urban space, this gives it an identity, and therefore a connection to the space. The function of the urban furniture is not just as an object of use, art, or communication. Items of urban furniture are elements designed not only for beautification, but to provide comfort, transportation, relaxation, entertainment, and protection from outside effects. The correct planning, designing, placement and regular maintenance of the urban furniture is important.

Table 33. Results of the chi-squared analysis for participants' perceptions of aesthetics and rough or smooth texture

	Aesthetic			
SEX	Rough and Smooth	Rough	Smooth	Grand Total
Men	25	31	49	105
Women	12	14	69	95
Grand Total	**37**	**45**	**118**	**200**
	Rough and Smooth	Rough	Smooth	Grand Total
Men	19.425	23.625	61.95	105
Women	17.575	21.375	56.05	95
Grand Total	37	45	118	200
			P-Value	0.000951755*

*P- Value < 0.05 is statistically highly significant.

Urban furniture items are important not only because of their functionality, but also as complementary and defining visual elements of urban spaces. While items of urban furniture used especially for visual reasons have positive effects on spaces, those having no aesthetic concerns but only functionality have negative effects on the surroundings. These effects, formed positively or negatively, show up more where urban furniture is used more densely, and are reflected in the urban identity. An urban aesthetic which is affected by unfavorable shaping of the urban space is the result of its not being thought of as a unified whole, or of attempts being made to find solutions to the problems without being aware of the whole. Designers deal with aesthetic elements besides functionality, and with new and creative ideas they make products more desirable. And in the process of furniture design, by adding their personal experiences and creativity, while considering universal principles of form, material, color and texture, they play an important role in increasing the users' psychological comforts and the visible quality of the urban environment.

Our evaluation of the questionnaire study showed that participants found urban furniture more aesthetically pleasing if it had unity, balance, rhythm, and a combination of functionality and aesthetics in its design; and if it had geometric forms, natural colors, fine and smooth surface textures; than if mixed and concrete-metal materials were used. We also found that elements such as sculptures or fountains increased the frequency of use of a space.

In the end, it is aesthetic principles where designers' personal foresight is also operating, that will shape the designs of urban furniture. In environmental design, considerations of form, materials, color and texture may play an active role, depending on the needs of a space and the choices made by the designer. In short, within the aesthetic concept of urban furniture, using effective principles can ensure that while each urban space's visible environmental quality is improved, people's psychological comfort can also be increased.

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