



Harmonizing Aesthetics and Function: A Study in Urban Furniture Design

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Abstract. This study analyzes the harmony between aesthetics and usefulness in urban furniture design, an important part of urban planning and design that has a considerable impact on the quality of urban areas. This analysis of three case studies—U-Like Urban Furniture Design, Agora Maximus Urban Furniture Design, and Concrete-Geometry Urban Furniture Design—highlights key strategies for attaining this balance. This study emphasizes key strategies for achieving this equilibrium, including aesthetic elements such as color, material texture, shape, and proportion, and functional elements such as user-centered design, functional diversity, environmental sustainability, and social interaction. The results show that designing urban furniture requires an integrated strategy that takes into account user needs, urban context, and environmental implications. Finally, the study suggests other areas of inquiry, such as case studies, experimental studies, and inquiries into the use of technology in urban furniture design. Urban furniture design is crucial to improving the livability and sustainability of cities, and this study contributes to the discipline by offering a way of achieving this harmony.

Keywords: Coordination, Environment, Social Interaction, Flexible

1 Introduction

Urban furniture is an essential part of urban design and planning, as it greatly improves the look and usability of public places. Benches, lights, trash cans, bus stops, and signs are all examples of urban furnishings that contribute to shaping the city and its residents' experiences [1].

The aesthetics of urban furniture can have a significant impact on the aesthetic appeal of a city. It can contribute to the overall character of the urban environment by enhancing urban identity and creating a sense of place [2],[3]. Gehl (2010) [4] found that aesthetically pleasing urban furniture can also promote positive psychological responses, happiness, and fulfillment among city residents and visitors.

Similarly essential, however, is the functionality of urban furniture. Whether its purpose is to provide accommodation, illumination, or information, urban furniture must be effective in achieving its objective. Functional urban furniture enhances the availability and accessibility of urban spaces, promotes social interaction, and enhances the general usefulness of the city[3], [5], [6].

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However, it can be difficult to achieve a balance between the aesthetic value and practicality of urban furniture. Frequently, the emphasis on aesthetic appeal can eclipse the actual requirements of users, and vice versa. Therefore, the purpose of this study is to investigate how to harmonize the aesthetics and functionality of urban furniture and to propose design strategies that strike a balance between aesthetics and functionality.

2 Literature Review

As a significant component of the urban environment, urban furniture plays a significant role in defining the social appeal of a city and enhancing the quality of urban space [1],[3]. It is intended to be both durable and functional, and its aesthetic quality is crucial [7].

Urban furniture's aesthetic value significantly contributes to the visual character of urban regions. Numerous reports have highlighted the need for aesthetically pleasing designs when creating urban furnishings. In the study they conducted, Mobilyalarinin et al. (2022)[6] examined the function of aesthetics in improving the attractiveness of urban areas. Urban furniture that is both aesthetically attractive and functional is a sort of public art that inspires and attracts both residents and visitors to a city.

The study by Farrokhira (2018) [1] further emphasizes the importance of aesthetics and highlights the key role of color in urban furniture design. The study suggests that the use of color contributes to people's mental relaxation and the visual aesthetics of the city. However, Farrokhira also identifies a common problem in urban furniture design - the choice of colors often lacks specific research into the cultural and social context of the inhabitants, which can lead to visual disturbances in the city [8]. Sustainable function and materials are equally important in urban furniture design as beauty. Ben Dhaou et al. (2022) [3] performed research in Tunisia to determine the possibility of recycling design to be incorporated into street furniture's practical purpose in urban public areas. Sustainable street furniture design, researchers theorized, helps improve city dwellers' quality of life.

There is also research into how to incorporate cultural aesthetic elements and technology into street facility design. By examining the existing state of street facilities in China's most renowned historical and cultural cities, Xia & Yang(2018) [9] developed a design model for the integration and innovation of culture and technology. From the vantage point of cultural and technological integration, researchers developed ideas and methodologies for designing street facilities in cultural and historical cities. Consideration of urban identity in the design of urban furniture has also been emphasized in the literature. Olgun & Erdoğan (2015)[11] did research in Antalya to find out how people feel about the city's furniture and what they want to see in terms of how it represents them. Researchers discovered that the city's current furnishings do not accurately portray or reflect the character of the area.

Though aesthetically beautiful furniture might boost a city's curb appeal, Kargar, (2016) [12] reports that it may not meet the needs of its users. On the other hand, city aesthetics may not benefit from extremely utilitarian furniture. It has been stated that

striking a harmony between these two factors is essential for creating functional urban furniture.

In conclusion, the literature shows that several criteria, such as aesthetics, usefulness, sustainability of material aesthetics, integration of cultural components and technology, and the portrayal of urban identity, should be considered in the design of urban furniture. These studies show how important it is to have a comprehensive approach to urban furniture design, one that strikes a balance between form and function and is cognizant of urban settings. Urban furniture design could benefit greatly from further investigation into these areas and the creation of novel approaches.

3 Urban Furniture Case Design Analysis

3.1 Case 1: U-Like Urban Furniture Design

U-Like Urban Furniture Design (Figure 1) is a unique illustration of how harmoniously form and function can coexist. Its U-shaped layout is visually appealing and physically prominent. The repeated "U" shape is a unifying and rhythmic element of the design. The U-shapes are arranged in a variety of ways to create a visually engaging and dynamic environment. Adding visual appeal to the design by emphasizing the "U" shapes in vibrant yellow contributes to a positive and friendly environment. Moreover, the U-shape has a vast array of applications. By altering the "U" shape in this manner, a substantial amount of usable space is created. The gradual up and down movement of the 'U' design is ideal for stimulating children's play activities. The design of urban furniture has the potential to enhance the usability and accessibility of public spaces; this design creates a multi-level recreation for children and a social platform for people.



Fig. 1. U-Like Urban Furniture Design (Resources from the Internet)

3.2 Case 2: Agora Maximus Urban Furniture Design

The Agora Maximus (Figure 2) is a refreshing departure from conventional urban furniture designs. The design is a visually appealing landscape made up of pixelated blocks of varying heights made of painted steel and wood. The modular structure may be set up, taken down, and relocated with relative ease over the summer's three distinct seasons. Using pixel blocks to create pop-up seating at regular intervals down the street, the design turns the city into a linear stage. The adaptability of the modular

system illustrates a practical approach to urban furniture design while also boosting the utility of public spaces.

Possibilities for aesthetic quality in urban space. High utilization, integration, and implementation of modular installations are also proposed by the design. The concept is both aesthetically pleasing and useful, with colorful 'pixel' blocks piled on top of one another and seeded with flora forming intriguing modular installations. The layout of the Agora Maximus is really eye-catching. Pixel blocks, fabricated from painted steel and wood and available in five various heights, serve as platforms, benches, and planters in this layout.



Fig. 2. Agora Maximus Urban Furniture Design (Resources from the Internet)

3.3 Case 3: Concrete - Deometry Urban Furniture Design

The Concrete-Geometry project (Figure 3), designed by Greyspace Architects, is an exceptional example of urban furniture design that integrates aesthetics and functionality. A semi-enclosed system of steel rods defines the perimeter of the urban furniture and encloses a centripetal gathering area. The orange hue of the steel components enhances the plaza's sense of community and encourages people to stop by. Functionally, the design activates diverse interactions between people and furniture, thereby expanding the plaza's potential for spatial stays.

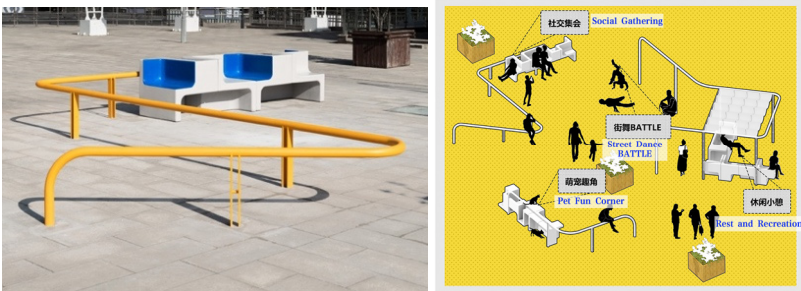


Fig. 3. Concrete - Deometry Urban Furniture Design (Resources from the Internet)

The Concrete Geometry concept is an innovative take on urban furniture that manages to be both aesthetically pleasing and practical. Seating areas in three dimensions are semi-curved to accommodate varying heights of occupants. The pieces can be inverted to create a variety of relaxation postures. The local sitting surfaces are given a splash of color to spice things up aesthetically using a blue coloring process. The orange hue of the steel elements creates a sense of community and encourages visitors

to linger in the plaza. The layout encourages people to engage in a wide range of activities with the plaza's furniture, so extending the time that may be spent in the area. The 'Concrete-Geometry' layout has a wide range of possible uses. The steel framework system uses three levels to facilitate a wide range of user-furniture interactions, including sitting, leaning, supporting

These examples highlight how well-designed urban furniture may improve city environments by catering to both aesthetic and practical needs. Simple forms, bright colors, and modular systems are used in each design to create visually appealing landscapes that may be put to a number of purposes. The designs offer useful lessons for future study and application in the realm of urban furniture design by emphasizing the significance of balancing aesthetics and practicality.

4 Discussion

Urban furniture design case studies such as U-Like, Agora Maximus, and Concrete-Geometry illustrate the harmony between form and function. In each of the three examples, unique forms and capabilities are realized by applying modular design concepts. These layouts have the ability to make public places more usable by meeting the needs of a wide range of people. The harmony between form and function in each building is distinctive. The Agora Maximus design creates a vibrant and exciting environment by combining bright colors and different heights, while the U-Like design uses the letter 'U' as a design concept to produce an aesthetically pleasing landscape. The Concrete-Geometry aesthetic fuses concrete and steel for a spare yet eye-catching look. This case study provides some potential strategies for achieving this balance of form and function in urban furniture. One such strategy makes use of modular design elements that can be combined in many ways to generate novel forms and behaviors. Cities may become better places to live if their plans could cater to a wider range of people and uses. The aesthetic value of the design can also be improved by using color and shape. A landscape with interesting shapes and vivid colors might be a great place to spend time. However, make sure that the design's aesthetics don't get in the way of its intended purpose.

4.1 Design strategies for balancing the aesthetics and function of urban furniture

Case study analysis resulted in the following design recommendations for bringing urban furniture closer to striking a balance between form and function, Design strategies as shown in (Figure 4).

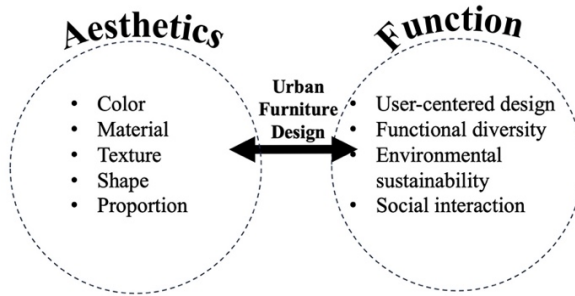


Fig. 4. Strategies for Balancing Urban Furniture with Aesthetics and Function

Aesthetics aspects:

Color: Color is the most straightforward and aesthetically pleasing design element in contemporary urban furniture. The way a piece of furniture looks isn't the only thing that can be affected by color; it can also alter how people feel and how much space they feel they have.

Material texture: An additional key aesthetic factor in urban furniture design is the material's texture and finish. The aesthetic value and practicality of furniture are both impacted by the materials used in their construction.

Shape: Shape design is of paramount importance in urban furniture. The aesthetic value, practicality, and comfort of furniture are all affected by its form and lines. Designers should make things that stand out visually and are also functionally well-balanced and comfortable to use.

Proportions: The feel of urban furniture configuration are intensely impacted by the utilization of extent. The furniture's scale ought to be proper for its area and capability. Abstain from utilizing anything excessively enormous or excessively little, since it will lose the equilibrium and working of the space.

Function aspects:

User-centered design: The plan ought to be centered around the necessities and inclinations of the end client. The ergonomics of the furnishings, the capacity to take part in a scope of errands, and the accessibility of all clients are factors that can add to this objective.

Functional diversity: The best design solutions are flexible and can be adapted to the needs of any age and unused user. For example, pregnant women, children, disabled, elderly, students, etc.

Social interaction: arrange the seating furniture in the aspect of the communication space, create public space, and arrange the seating layout that facilitates communication, such as can realize face-to-face conversation, back-to-back conversation, circular, semi-circular, right-angled layout form. The strategic urban furniture proposed in this study finds some harmony between aesthetics and function. Product designers and landscape architects produce urban furniture that is both stylish and functional, thereby enhancing the user experience and improving the image of the city.

5 Conclusion

In order to comprehend that aesthetics and utility can coexist in urban furniture, this study analyzes the U-Like Urban Furniture Design, the Agora Maximus Urban Furniture Design, and the Concrete-Geometry Urban Furniture Design. The paper's major findings are as follows: Making cities better places to live includes creating urban furniture that serves a purpose while also being aesthetically beautiful. When designing urban furniture, it is important to strike a balance between aesthetic concerns like color, material texture, shape, and proportion, on the one hand, and user-centered design's practical adaptability, urban environmental sustainability, and social interaction, on the other. Modular design features, creative use of color and shape, and thought given to longevity and maintenance are all important strategies for attaining this balance between form and function in urban furniture. These results contribute to the development of urban furniture by emphasizing the need for and suggesting methods for achieving, harmony between form and function. To better understand how to achieve harmony between form and function in a variety of urban and cultural settings, future study directions may include further case studies. Also, there is room for experimental investigations to evaluate how various design ideas could enhance the aesthetic and practical features of urban furniture. The aim of this article has been to give a thorough design strategy for striking this balance between aesthetics and usefulness in urban furniture design, so as to contribute to more liveable and sustainable cities.

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