

# Human-centered Design for Urban Public Space from the Perspective of Environmental Art Design

Yupeng Hu

Hainan Vocational University of Science and Technology, Haikou, Hainan Province, China 571126

**Abstract:** *Urban public space, as an important vessel for citizens' daily life and social interaction, its design quality directly affects the quality of life and happiness of urban residents. Environmental art design, centered on the harmonious coexistence of humans and the environment, provides critical conceptual frameworks and technical support for the human-centered development of urban public space. This paper begins with the core tenets of environmental art design, integrates the fundamental demands of human-centered design for urban public space, and delves into the essential dimensions of human-centered design from an perspective of environmental art design, including: adaptive design of spatial scale, diversified construction of functional layout, emotional design of environmental atmosphere, and localized expression of regional culture, aiming to propose feasible pathways for enhancing the cultural value of urban public space and fostering livable urban environment.*

**Keywords:** *Environmental Art Design; Urban Public Space; Human-centered Design; Space Creation; Humanistic Care*

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## 1.Introduction

As urbanization advances continuously, the functional and humanistic attributes of urban space have received increasing attention. As the “living room” of a city, urban public space undertakes multiple functions such as leisure and entertainment, social interaction, and cultural transmission. Whether their design meets people’s needs and contains humanistic care has become an important indicator for measuring the quality of urban development. Environmental art design, as an interdisciplinary filed that integrates art, technology and humanity, emphasizes taking human perception and needs as the starting point to achieve a harmonious unity of the environment and humanity through the systematic integration of elements such as space, color, light and shadow, and materials <sup>[1]</sup>. At present, the design of public space in some cities has problems such as emphasis on form over function, on commonality over personality, and on construction over experience, which struggles to meet the diverse and personalized needs of citizens.

## 2.The Core Correlation Between Environmental Art Design and Human-centered Design for Urban Public Space

### 2.1 The Core Tenets of Environmental Art Design

Environmental art design focuses on the interactive relationship between humans and the environment as its core research object, covering multiple fields such as urban planning, architectural design, landscape design, and interior design. Its essence is to optimize and reconstruct the environmental space through the integration of art and technology, ultimately achieving the goal of “people-oriented” environment construction. Unlike traditional spatial design, environmental art design prioritizes not only visual aesthetics but also functional pragmatism, ergonomic comfort, and humanistic resonance within spatial environment. It lays stress on exploring people’s physiological, psychological and emotional needs. Through precise control of spatial elements, it can craft environmental space that fulfills functional imperatives while embodying humanistic resonance <sup>[2]</sup>. In the design of urban public space, the core value of environmental art design lies in integrating “human needs” throughout the whole design process, and making public space truly become the places that closely align with citizens’ life and carry their emotions through systematic design in spatial scale, functional layout, environmental atmosphere, and other aspects.

## **2.2 The Core Demands of Human-centered Design for Urban Public Space**

Human-centered design for urban public space fundamentally revolves around fulfilling human needs, achieving adaptive calibration between spatial design and human scale, behavioral patterns, and psychological aspirations. From a physiological perspective, human-centered design must address citizens' fundamental activity needs in public space—including walking, resting, and socializing—requiring space to deliver high accessibility, comfort, and safety. From a psychological perspective, human-centered design needs to pay attention to the emotional experience of citizens, and enable citizens to attain a sense of belonging, place-identification, and experiential delight within public space by creating a spatial atmosphere. From a social perspective, human-centered design needs to take into account the needs of different groups, including the elderly, children, the disabled and other special groups, to achieve inclusiveness and fairness of public space. From a cultural perspective, human-centered design requires to explore and inherit regional cultural characteristics, making public space become vessels for conveying the cultural essence of a city and enhancing citizens' cultural identification [3].

## **2.3 The Intrinsic Compatibility Between the Two**

Environmental art design and human-centered design of urban public space exhibit profound intrinsic alignment in their core objectives. Both take “human-centered design” as the core principle and aim to achieve harmonious coexistence between humans and the environment ultimately. Environmental art design provides systematic design frameworks and technological methodologies for human-centered design in urban public space. Through precise control and integration of spatial elements, it transforms the human-centered design philosophy into specific spatial forms. The human-centered demands of urban public space provide clear design directives for environmental art design, enhancing its targeted applicability and practical efficacy. The strategic integration of the two effectively resolves prevalent issues in urban public space design—such as superficial formalism and homogenization—propelling a paradigm shift from “functional fulfillment” to “quality enhancement,” and advancing from “space creation” toward “humanistic care” [4].

# **3. Core Dimensions of Human-centered Design for Urban Public Space from the Perspective of Environmental Art Design**

## **3.1 Adaptive Design of Spatial Scale**

Spatial scale is a key factor influencing the experience of public space, which directly impacts citizens' comfort levels and safety and security within public space. From the perspective of environmental art design, adaptive design of spatial scale essentially is to achieve an exact match between spatial scale and ergonomics as well as human behavioral habits, avoiding creating discomfort caused by disproportionate spatial scale, whether excessively large or overly confined. In the design of large-scale public space, such as city squares and central parks, it is necessary to subdivide large space into multiple small-scale sub-space through reasonable spatial division, thus forming a spatial form with rich layers. For instance, through the layout of elements such as landscape plants, waterscapes, and sculptures, resting areas, activity areas, communication areas, and other sub-space with different functions are demarcated in the large square to mitigate the sense of emptiness and spatial alienation induced by oversized environment. Meanwhile, buffer space can be established in the spatial transition areas to achieve natural connection between space of different scale, enhancing the coherence and ergonomic comfort of the space.

In the design of small-scale public space, such as community pocket parks and street corner space, it is necessary to pay more attention to the compactness and warm feeling of the space, and avoid the sense of oppression induced by too small space scale. In the design, the activity needs of humans should be fully considered, strategically arranging amenities, such as resting seats and pedestrian pathways, to ensure the accessibility and functional pragmatism of the space. Meanwhile, designers can create a warm and comfortable spatial atmosphere by reasonably controlling the height and width of space and using light and shadow. In addition, differentiated design should be carried out to fulfil the scale needs of different groups. For instance, for children, amenities and spatial scale that are

in line with their height and activity habits should be designed in children's activity space. For the elderly group, seats with fit height and gentle pedestrian pathways should be arranged in the rest space to enhance the adaptability of the space.

### **3.2 Diversified Construction of Functional Layout**

The functional imperatives of urban public space are characterized by diversification and complexity. From the perspective of environmental art design, functional layout design essentially is to achieve reasonable zoning and organic integration of functions, and fulfil the functional requirements of different groups and scenarios. Firstly, emphasis should be placed on functional fundamentality and pragmatism to ensure that public space has fundamental functions, such as resting, walking, and communication, strategically calibrating fundamental service amenities, such as resting seats, public restrooms, and water dispensers, to enhance the convenience of public space. Secondly, emphasis should be placed on functional diversification and integration, establishing specialized zones—such as fitness areas, cultural exhibition space, and family activity hubs—to deliver “one-stop” spatial service. For instance, in community parks, apart from traditional rest and afforested areas, fitness trails, ping-pong tables, amusement facilities for children, cultural publicity boards, etc. can also be added to fulfil the functional requirements of citizens at different age.

### **3.3 Emotional Design of Environmental Atmosphere**

The creation of an environmental atmosphere is one of the core contents of environmental art design and also an important way to achieve human-centered design of urban public space. Environmental art design creates a spatial atmosphere with emotional warmth through the systematic integration of elements such as color, light and shadow, materials, and plants, fulfilling citizens' psychological needs and emotional aspirations within public space. In terms of color design, appropriate color combinations should be selected integrating the functional attributes and emotional needs of public space.

In terms of light and shadow design, a combination of natural light and artificial light should be fully utilized to create rich and varied lighting effects. The use of natural light can enable sunlight to naturally enter environmental space and create changes in soft light and shadow through reasonable spatial layout, window design, and the combinations of green plants, enhancing spatial permeability and multi-sensory comfort. The use of artificial light can meet the functional requirements of humans in nighttime through the layout of amenities such as street lamps, yard lamps and landscape lamps, while creating a warm and romantic night atmosphere. For instance, in urban waterfront space, soft landscape lights along the banks can cooperate with the light-reflecting effects on the water surface to create a quiet and beautiful night atmosphere, providing citizens with a good place for resting and communication at night. In terms of material selection, attention should be paid to the comfort, safety and security and ecology of the materials, selecting materials with tactile gentleness, slip-resistance, and abrasion durability—such as timber, stone, and rubber—to enhance citizens' experiential quality within public space. At the same time, eco-friendly and recyclable materials should be prioritized for selection to reduce pollution to the environment. In terms of plant configuration, it is necessary to select native plants that are adapted to the local climate conditions, and prioritize botanical diversity and stratified dimensionality in planting design to create natural and ecological plant landscape by combining trees, shrubs and herbaceous plants. At the same time, plant configuration should prioritize seasonal changes to ensure rich landscape effects in different seasons, providing citizens with good visual experience and ecological environment.

### **3.4 Localized Expression of Regional Culture**

As the vessel of urban culture, the human-centered design for urban public space cannot do without the localized expression of regional culture. From the perspective of environmental art design, the localized expression of regional culture essentially lies in exploring a city's historical culture, folk customs, and regional features, and integrating them into the design of public space, transforming public space into emissaries that convey the cultural

essence of the city and enhancing citizens' cultural identification and sense of belonging. During the design process, it is necessary to conduct in-depth research on the historical context of a city, explore its representative cultural symbols and traditional elements, and integrate them into spatial forms, landscape facilities, decorative details and other aspects through artistic transformation and reconstruction. For instance, in cities with rich historical and cultural heritage, designers can integrate the elements, such as the shapes, patterns and colors of traditional buildings into the design of amenities like seats, sculptures and lamps in public space, making the public space brim with a historical and cultural atmosphere. At the same time, the localized expression of regional culture should focus on the integration with modern design philosophy, avoiding the simple accumulation of cultural symbols. Through the contemporary reinterpretation and innovative transformation of traditional elements, we achieve a dynamic synthesis between heritage and modernity, enabling public space to embody distinctive regional cultural identity while fulfilling modern citizens' functional requirements and aesthetic sensibilities. For instance, designers can transform traditional paper-cutting and embroidery art into landscape sculptures, floor covering designs, and other forms, and integrate them into modern urban park designs, which not only conveys the essence of regional culture, but also enhances the artistic beauty of environmental space.

#### **4. Critical Reflexivity on Human-centered Design Practice in Urban Public Space from the Perspective of Environmental Art Design**

##### **4.1 Core Issues in Design Practice**

Although environmental art design provides feasible pathways and methods for the human-centered design of urban public space, there are still some issues that need to be solved urgently in actual design practice. The first is the disconnection between design philosophy and actual needs. Some designs overly pursue visual effects and form innovation, neglecting the actual functional requirements and behavioral habits of citizens. As a result, although public space is aesthetically pleasing in appearance, it lacks functional pragmatism. The second is superficial cultural expression. Some designs do not delve deeply enough into regional culture, merely piling up cultural symbols without a profound interpretation and innovative expression of cultural essence, struggling to form a true cultural identification. The third is that designs pay less attention to special groups. Although some public space is equipped with fundamental service facilities, it lacks specialized designs for special groups such as the elderly, children, and the disabled, struggling to fulfill their functional requirements. The fourth is that inadequate post-construction maintenance and management have led to systemic degradation in certain public space, where facility deterioration and environmental decline—stemming from ineffective upkeep protocols—compromise both functional integrity and service lifespan, ultimately eroding public space efficacy.

##### **4.2 Optimization Pathways and Suggestions for Improvement**

In response to the above issues, the following optimization pathways and suggestions for improvement are proposed integrating the core philosophy of environmental art design. The first is to strengthen the need-oriented design philosophy, conduct thorough research in the early stage of designs, deeply understand the actual needs and behavioral habits of citizens, and integrate citizens' needs throughout the whole design process to ensure the practical efficacy and targeted applicability of design schemes. The second is to deeply explore the essence of regional culture, strengthen the research and analysis of the historical context of cities, and extract representative cultural elements to achieve in-depth interpretation of regional culture, cultivate cultural profundity and activate heritage narratives within public space through artistic and innovative transformation. The third is to lay emphasis on the inclusiveness and fairness of designs, pay more attention to the needs of special groups, carry out specialized designs in amenity establishment, spatial layout, material selection, and other aspects to ensure that special groups can use public space equally and conveniently. The fourth is to establish a sound post-construction maintenance and management mechanism, clearly define the maintenance responsibility entities, strengthen the daily maintenance and management of amenities and the environment in public space, and conduct regular amenity overhaul and

environmental improvements to ensure the sustained functional integrity and operational excellence of public space.

## 5. Conclusion

Human-centered design for urban public space is an important measure to enhance the quality of a city and increase the happiness of citizens. Environmental art design, with its “human-centered” principle and systematic design methods, provides key support for the human-centered creation of urban public space. From the perspective of environmental art design, human-centered design for urban public space should revolve around four core dimensions—the adaptability of spatial scale, the diversification of functional layout, the affective resonance of environmental atmosphere, and the contextual authenticity of regional culture—to construct public space that not only fulfill functional imperatives, but also contain humanistic care through the systematic integration and optimization of spatial elements. Meanwhile, in design practice, it is necessary to strengthen need-oriented designs, deeply explore regional culture, pay attention to inclusive design, and improve the post-construction maintenance and management so as to continuously elevate the human-centered operational efficacy and experiential depth of urban public space.

## References:

- [1] Xiyu Zhao.(2024)*Wall Art Design in Urban Space from the Perspective of Public Art:A Case Study of the Relief Mural Design of“Classic Porcelain of the Silk Road”*[J].*Collection&Investment*,15(09),125-127.
- [2] Yujun Liu, Yuhao Bian.(2024)*Environmental Art Design of Public Space from Multi-Dimensional Perspectives*[J].*Beauty&Times(Urban)*,3,77-79.
- [3] Lin Lin.(2023)*Environmental Art Design of Urban Public Space from the Perspective of Sustainability*[J].*Masterpieces of Nature*,30,33-35.
- [4] Lei Wang.(2022)*Principles and Methods of Public Art Design in Urban Space from an Aesthetic Perspective*[J].*Journal of Heihe University*,13(11),149-150+153.