Research Article

Optimization Method of Urban Square Public Space from the Perspective of Contextualism

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In the era of rapid development of science and technology, in order to attract the public’s attention, many architectural designs unilaterally pursue nonmainstream design, completely ignoring the surrounding environment and historical context. The original spatial features and scales have disappeared, and the root cause is that the spatial shaping is separated from the urban context. Urban design that continues the urban context is not only a method to solve specific urban space problems and contradictions but also an important means to build a beautiful urban space and achieve sustainable development. The urban design of the two banks of the Pinghe River in the east of Foshan is based on the sorting and analysis of the material and spiritual elements of the context of the base. This article will go back to the trend of Western architectural contexts and discuss how to design new buildings while respecting the historical context of the city through rational speculation on the two dimensions of contextualism architectural theory, space and time, combined with architectural cases.

1. Introduction

In the 1930s, many Chinese architects returned from overseas and brought back Western modernist architecture. In the 1980s, the trend of Western architectural theory arose again in my country. People gradually realize that Western architectural theory is an effective design method, and more architects try to apply these theories to modern architectural urban design. While studying western architectural theory, it is also necessary to emphasize the confidence of national culture, and the attention to architectural urban context has become a focus topic. Looking at the development of Chinese architectural culture in recent years, the buildings that are deliberately symbolic, strange and vulgar, and extremely discordant with the surrounding environmental conditions are increasing. Many buildings with strange images have become a topic of discussion among netizens after dinner, and there is even a list of the top ten ugly buildings in China that is reviewed every year. Either the company’s products are unmodified as the appearance model, or the model expresses the blind worship of sexual culture, or imitates and plagiarizes Western architecture. Many buildings try to use the “ugly” name. A lot of buildings try to make a name for themselves as “ugly.” Architecture is a part of a specific history and a specific urban background, and it is a macro-spatial combination, which should fully consider its environment and historical background. There have been many great cities in Chinese history, such as Yecheng and Chang’an, which were planned in an orderly manner. The symbols of history should not be forgotten, and the design of the building should be completed in the macro urban context. It should be done in a macro urban context. Recalling the trend of Western architectural theory, contextualism has always been controversial. Many buildings produced under contextualism are not coordinated with the existing environment, and the design is conservative. In modern architectural design, we should hold a rational and speculative attitude, understand contextualism, use it as a technique of urban design, and consider and learn from the architectural environment and history [1].

The word context originated from the field of linguistics. It is a historical category developed in a specific space, and its
extension contains extremely broad content, which is interpreted as the context of the culture in a narrow sense [2]. The thought of context has a long history. In China, it was first introduced into the field of architecture and then gradually extended to cities. Due to the lack of in-depth research on the ambiguity and uncertainty of the context theory and its slow development, it has not formed an independent theoretical system and has been widely used in architecture, cities, and landscapes in the form of theoretical concepts. Today, the meaning of context in the city has been comprehensively updated and inherited [3]. “The current context is based on the specific situation of our country, drawing on Western contexts to develop and innovate, giving Chinese culture a way of interpreting it, and imbuing it with new cultural connotations. It not only represents the cultural essence of the past but also points to the most current cultural essence. Vibrant cultural genes pay more attention to the potential for future cultural innovation. The systematic project of promoting and inheriting culture is called “New Context Doctrine.” In the concept of the new context doctrine, the understanding of context is no longer limited to the old and the new. To solve the problem of cohesion, we should conduct an in-depth and three-dimensional excavation of its connotation, adapt to the needs of sustainable development of urban culture, and reveal the evolution law of context [4].

In terms of ideology, the development of the “city color pulse” is rooted in the concept of the collective unconscious created by Jung, which is an inherent deep unconscious. “The level of the collective unconscious is unconscious, and it contains the influence of the experiences accumulated by all generations in the past, including distant ancestors [5].” The fundamental reason for its formation is the common environment, that is, the environment with the social and cultural place, and it includes all indoor and outdoor man-made environments and natural environments. The fundamental feature of this environment is what Schultz calls the “spirit of place,” which creates and perpetuates the collective unconscious and its archetypes that exist in the deepest part of the human spirit. The traditional color ideology was formed earlier; from ancient times, the color cognition was developed from the fear of life to the ideology of color symbols as totem worship. In the Yangshao culture, Xia, and Shang dynasties, the color aesthetic psychology gradually formed. In the Zhou dynasty, the simple materialist worldview “Five Elements Theory” was combined with the worship of five colors, five numbers, heaven, Earth, human beings, and gods, forming a combination of time, space, human relations, and ritual system, the “Five Elements of Color Science” [6]. During the Tang and Song dynasties, the traditional “five-color aesthetics” was finally formed. Nowadays, with the introduction of the rational western color theory system, the traditional “five elements of color theory” has been gradually ignored. Although the simple color concept has not formed a color science system, the aesthetic awareness of the five colors has been deeply rooted in the hearts of the people and has become a national color feature [7] (as shown in Figures 1–3).

The connotation of architectural “context” includes two main lines of cognition: One is the spatial dimension, which refers to the physical space environment in which the building is located, including the natural environment and artificial environment; the other is the time dimension, which refers to the generation and development of buildings and the social and cultural background on which it depends. The so-called continuity of spatial context emphasizes the expression of the building in the spatial relationship of the neighborhood and respects the regionality of the building [8]. Robert Stern believed that “Architecture is a part of the whole” and “The new building should be adapted to the environment” [9]. In 1950, Venturi believed that architecture does not exist in isolation by itself but should be related to the whole between architecture and urban space, and form part of the whole of urban space. This is consistent with the “whole prior to the part” view emphasized in Gestalt psychology and the “text prior to sentence” idea advocated by Frege in the field of linguistics [10]. Whether there is a unified context between the building and other buildings reflects whether the relationship between the part and the
whole is harmonious. When a building is harmonious in its site, it will likely disappear into the site and the urban environment. People often think that this is a lack of design and is just a replica. However, the overall connotation of the city is magnified, and a new building that is in harmony with the urban context should be a work that skillfully uses the connotation of contextualism and design skills, rather than a simple and crude plagiarism [11].

2. The Concept, Spatial Value, and Constituent Elements of the Urban Context

2.1. The Concept of the Urban Context. The word context is derived from “Context.” As a term used to express the logical relationship between upper and lower contexts, it can also indicate the background and conditions in which things occur. Things can only develop if they are connected with a specific background environment. If the context is the soil of urban development, then the space shaped by urban design is the creation based on the context and soil. Context is the background of urban development and is related to many essential elements that affect urban development. All explicit and implicit elements related to the formation and development of a city can be included in the category of urban context [12].

Context is the connection in time and space between things created by human beings and things. It has both the “synchronicity” of horizontal time and space and the “diachronic” of vertical time and space [13]. By extension to the field of urban research, the basic connotation of urban context can be obtained, that is, in the process of historical development and under specific conditions, there is a dynamic and internal relationship between people and the natural environment, the built environment, and the corresponding social and cultural background, and the sum of essential connections [14].

After fully considering the style and morphological characteristics of the existing buildings on the plot, first choose to carry out roof renovation for the buildings with a north-south strip in the block volume, and make certain innovations in the sloping roof, connecting with glass in the middle to adapt to the building volume. The problem of lighting difficulties caused by it; second, repair the facades of the buildings along the street, strengthen the interface characteristics of the buildings along the street, try to control the height of the buildings on both sides of the alley and the parking lane, and ensure the integrity and unity of the style along the street. Through historical research, sorting out the width of the street and the height of the buildings on both sides, and on the premise of respecting the history, the comfort of the street is improved and adjusted to a certain extent, and the width of the two streets and alleys is controlled to be about 3.0 ~ 3.5 m. The building height is controlled below 5 m. Finally, when repairing the original courtyard with missing texture, the newly added building should echo the style and volume of the original building and make appropriate adjustments on the premise of respecting the history to adapt to modern life and create a comfortable living environment [15].

2.2. The Spatial Value of Urban Context. Public space is the main place where residents work and live and is an important part of urban space (as shown in Figure 4). The public space that concentrates on the urban context and public activities can fully demonstrate the city’s heritage, charm, and vitality [16]. With the continuous acceleration of the urbanization process, driven by the short-sighted construction goals, the problems of monotony and low-quality urban space have become increasingly prominent, and the original spatial characteristics and scales have disappeared. The root cause of this problem is that today’s spatial shaping is divorced from the context of the city. First of all, the internal streets and alleys should be fully sorted out, and the additional buildings should be demolished to make the originally narrow and blocked internal streets and alleys open and transparent so as to enhance the comfort of the living space and further solve the hidden dangers of safety. The facades of the buildings on both sides of the streets should be unified in style, embellished with appropriate historical and cultural elements, and appropriate building concessions should be made to create micro-ecological nodes to create street landscape ecological corridors. Second, on the basis of dismantling buildings with incompatible styles, guided by the spatial layout of traditional courtyards in the old city, dismantling structures that destroy the courtyard pattern, rebuilding new buildings in areas where the pattern is vacant, and ensuring that it is compatible with the existing historic buildings and the traditional courtyards are in harmony, fully continuing the courtyard space pattern of the historical and cultural blocks, and creating a comfortable living and leisure space for the residents. Finally, retain the existing ancient trees in the plot, use them to create landscape space nodes, recreate the historical living space scene of the block, and create a comfortable and livable external living space [17].

Therefore, it is necessary to clarify the relevant elements of urban context and urban space design, comprehensively use urban design methods and context analysis and refinement methods, continue the context, and focus on the...
inheritance and innovation of the context in the design of urban public spaces so as to create a “cultural context.” The key to establishing a city’s image, increasing its charm, and enhancing its competitiveness is to realize the harmony between man and the environment, and the harmony between history and modernity [18].

2.3. Elements of the Urban Context

2.3.1. Material Elements. It is divided into two categories: one is the structural elements formed by the long-term accumulation of urban space; the other is the spatial form elements formed from the local climate, materials, and culture [19].

Structural elements include urban pattern, urban context, and urban texture. Structural elements are closely linked to the daily activities of residents through the perception of macro-spatial relationships such as axes, geographic markers, and skylines, and local structural elements should be respected in urban design. Spatial form elements refer to a variety of elements including urban skylines, urban landmarks, historical relics, dynamic place areas, and distinctive local spaces (such as spatial scale, shape, texture, color, interface, etc.) [20].

2.3.2. Spiritual Elements. Spiritual elements mainly refer to the regional culture of a city. It is the sum of various spiritual resources, including the morals, beliefs, customs, and arts of the city, as well as the habits and all other abilities learned by each city member [21]. Spiritual elements, as an abstract concept, are the essential attributes of “people” that govern activities in a specific urban space. Only by thoroughly analyzing and classifying urban regional culture, creating suitable local culture and habits in specific urban places, and providing unique cultural activity space can we create an urban space full of vitality and a sense of place belonging [22].

3. Urban Space Construction Methods from the Perspective of Context

For urban design, context continuation is to advocate in the design of specific sections, through the analysis and research of the urban context, to maintain the continuity of the original space, culture, and life and highlight the characteristics of the city. This concept limits the problem of urban characteristics to the category with space as the basic research object, which makes the work goal of urban design clear. By summarizing excellent cases at home and abroad and the continuous improvement of urban design experience, the urban design method based on the purpose of context continuation can be summarized in the following three points [23]. Through the urban design, the spatial elements of the base are sorted out, the original “Wang Jigang-Green Island Lake” space corridor is retained, and the axis of “Green Island Lake-Jihua Road” is listed as the two major axes; at the same time, through sorting out, the topography and local settlement texture have extracted four characteristic elements of “lakes, hills, islands, and swells.” As an open public activity space, “lake” is one of the important ecological landscape elements, and various public activities can be carried out; it is the core area of public activities and the core of gathering popularity; “Chong” is an important link for the functional connection of various groups. On the axis, this urban design clarifies the original landscape axis of “Green Island Hu-Wang Jigang,” which serves as the principal basis for urban design to organize space and connect the two banks of the river. In terms of group relationships, the base is divided into three groups with different themes. Each group grows from existing elements and connects with the road network, rail transit stations, and water buses. The “S”-shaped lake gushing texture belt connects the “three groups on both sides of the strait” to form a spatial pattern of “one belt, three centers, two axes, and three groups”, and based on this, the spatial layout of urban design is guided. The Green Island Lake Smart Group not only concentrates on the main production and service functions of the Shanxi area but also owns the important water system resource of Green Island Lake. Therefore, the urban design positions this group as a comprehensive display of the cultural characteristics of Lingnan water towns and a provision for the Guangfo area. The intelligent highland of comprehensive services, through this intelligent group, strives to integrate the vitality of multiple waterfronts, realize the organic complementarity of main functions, and make it a springboard for connecting the two banks of the Dongping River and realizing the integrated development of the Ronghe River, creating the iconic core of Shanxi space. The central wisdom island is the core area of the entire design, and it is also the area that the axis of Wang Jigang and Lvdao Lake traverses. In the urban design, the spatial development model of the landscape city should be introduced, that is, to follow the natural
landscape space and create architectural space. Make it complement each other with the landscape axis accumulated in the context. The building space is created with green buildings and earth-covered buildings as the core elements, and the second-floor platform is organically combined with the platform across the embankment to build a core space with good accessibility and fun and at the same time reflect the image of a waterfront city [24].

3.2. Transplantation of Context. In the process of urban design, the issues of “new” and “dilapidated” must be considered. For many issues such as whether to keep the urban context elements as they are after refining the urban context elements, and whether the original urban space cannot coexist with the new development, the author believes that the key lies in whether the context elements can be transformed into design principles in the design. We transform the complex “semantics” of the original context elements into a simple space “language” so that the urban design integrates and presents the structural relationship and characteristic symbols of traditional space.

3.3. The Shaping of the Contextual Characteristic Space. After extracting the local contextual elements and completing the transplantation work, the basic materials of urban design are obtained. By clarifying key areas, shaping a new spatial structure system, sorting out and arranging elements at all levels, and optimizing the arrangement of original elements, the new space has both historical continuities and adapts to the requirements of the new era. In terms of details, through the introduction of new functions, new materials, and new technologies, symbolic traditional cultural elements are added so that the precipitation of history and time can be displayed in the new urban space [26].

4. Optimization and Promotion Strategies of Urban Square Public Space from the Perspective of Contextualism

Public space is an important part of the urban innovation ecosystem. It is not only an important part of the material elements of the urban innovation zone but also the specific bearing and expression of economic and network elements, and is the spatial basis for “stimulating agglomeration.” Through the understanding of the theoretical basis of the urban innovation zone, this paper believes that the public space of the urban innovation zone should reflect the characteristics of its three components, so the construction of the public space of the urban innovation zone should comply with the three principles of accessibility, openness, and network.

The physical elements of the urban innovation district enhance the innovation ecosystem by providing a compact and efficient mix of functions and street connections, so the public spaces of the urban innovation district need to be accessible to enable the connection between the physical elements. Public space is an important part of physical elements, including neighborhood scale public space. In order to make full use of the high quality public space, it is necessary to integrate the public space with exhibitions, concerts, restaurants, residences, and so on into a compact, functional mixed area. Connectivity that connects Category 1 (public realm) and Category 2 (private realm) physical assets is critical to public spaces in urban innovation districts, including walkable and cyclable street networks, among others. Based on the same concept, high-quality and convenient public transportation serves the interconnection of cities and regions. The transportation infrastructure such as Barcelona’s ring road and high-speed rail to Paris, Boston’s Silver Line, and Sydney’s northern M2 railway line are all urban infrastructure. The public space of the innovation district brings a large flow of people.

The management of the public space of the urban innovation district needs to follow the principle of openness to promote the diffusion of innovative activities and creative ideas in the public space. The urban innovation zone emphasizes the importance of spatial proximity and aggregation of economic activities. However, due to the blurred boundary of the urban innovation zone and the blurred boundary between work and life, the public space and the private space have proximity to economic activities. Circulating information has the characteristics of “liquid” and lack of openness, and information spillover cannot be realized, so the appearance of good ideas will disappear without circulation and diffusion. According to the Twelve Principles of Urban Innovation Districts published by the Brookings Institution, public spaces make innovation visible and open. Open innovation events help spark the curiosity of potential innovators, spark dialogue among neighbors, and spread innovations. Thus, in the urban innovation district, the public space becomes an outdoor testing ground for testing the initial results of innovation. The Boston District District Hall is itself a product of innovation, creating a new public space for the purpose of promoting a culture of innovation, the Innovation Hall. Opening District Hall in the BSID as a pilot project also accommodates a variety of innovative activities.

The social element of the city innovation district emphasizes the importance of social interaction, which not only lies in the strong ties between similar fields and departments but also focuses on the establishment of new ties between fields and departments, that is, weak ties. The public space serves as a key container for establishing weak ties, providing opportunities for chance encounters, networking, and knowledge spillovers. Creating an innovative atmosphere is
a new public interest represented by public space in urban innovation zones under the background of sharing economy and technological innovation. Networking is essential for public spaces, such as a series of activities to learn and develop new skills and build social interaction. High-frequency social interactions among innovative populations tend to be concentrated in a few specific “hot spots,” which may occur naturally. In addition, the innovation district requires a series of catalyst activities to reactivate neglected public spaces. Therefore, public space is the link between these “innovation hotspots.” In addition to forming a visible public network, it is more important to establish an internal interactive network relationship of competition, collaboration, and learning.

Spatial location is an important factor affecting the layout and form of public space in urban innovation districts. The Huanghuagang Science and Technology Park area is located in the old city of Guangzhou. Due to the tighter land use, the development intensity is often greater and the construction density is higher, showing the characteristics of compact urban space. During the process of urbanization, the surrounding living facilities are gradually supplemented. The surrounding communities are more closely connected, forming a mixed-function area. The overall layout of the land is larger, and the layout mode of multiple independent parks is adopted, which has more flexibility; at the same time, it has more abundant natural resources, and the planning considers the natural ecology, the interaction of the environment. In general, the core area of the main city is limited due to the limited urban space and limited space development of the science and technology park. The main open space is arranged along the road, and the street has become an important vitality center. On the other hand, due to the lack of interaction between public innovation space and public open space, the low degree of innovation openness is also the reason for the lack of vitality of public space.

A reasonable layout can improve the utilization rate of local accessibility of public space in the innovation zone. Traditional parks are generally relatively closed, and physical measures such as the establishment of walls are used to isolate the park from the residential community, which is not conducive to the integration of the park into the surrounding communities. Improving the local accessibility of public spaces in the urban innovation zone is conducive to keeping the park open and flowing. MPID has designed a variety of options for walking or cycling into the Lane Cove National Park from the track site while enhancing the density of the road network combined with the road network layout of public spaces to improve the accessibility of public spaces. Shenzhen Huaqiangbei District was born out of Shangbu Industrial Zone and continued the characteristics of openness of industrial blocks. The pattern of “small plots, dense road network” broke down the walls that were drawn as the ground to enhance the communication between plots, making the streets easier to communicate with each other. It has become a highly accessible public space in itself, which is friendly and approachable to pedestrians. In the practice of Guangzhou in recent years, the urban design and control planning optimization of Pazhou West District emphasizes the urban development concept of “compact, intensive, efficient, and complex.” The arcade street of more than 2 kilometers is implemented on the ground, the three-dimensional platform is built in the air, and the underground is connected through the vertical traffic module, ground, and air public spaces to realize the interconnection of public spaces. Figure 5 shows the optimization strategy proposed in this paper.

Providing a walkable environment in public space is an important condition for crowds to gather. High-density technology parks need to avoid rapid and massive traffic and people; planning new technology parks should avoid lack of consideration of spatial scale and one-sided pursuit of landscape ecology. The effect is to blindly build wide green isolation belts and huge square nodes. Shared communication space is an important feature that distinguishes the urban innovation district from other urban spaces. Similar to the community service center in each community, the shared communication space is a special public space built by the urban innovation district to stimulate innovation vitality, providing an open place for the exchange of ideas for the innovation district, allowing more people to get in touch with the ongoing innovation activities and promote the improvement of the innovation ecosystem. The purpose of building a shared communication space is to encourage knowledge sharing and information exchange. From the perspective of economic factors, building a rich and available shared communication space is conducive to promoting the exchange and collision of ideas. Around the world, regions building urban innovation districts actively build shared exchange spaces to provide venues for knowledge flow. Innovation districts in Barcelona and Stockholm, for example, have developed workshops and informal meeting spaces to encourage such exchanges; Research Triangle Park in North Carolina is a successful cluster, but they have found that the lack of venues for the exchange of ideas limits the They go further; they try to redevelop their physical spaces to allow for active interaction.

Network innovation is created from the bottom up. Urban innovation districts cannot be achieved with a single order. Various event planning and construction are needed to promote collaboration between industries and departments and to foster innovative networks and a culture of exchange and sharing. Providing a public space that promotes communication and interaction is a prerequisite for nurturing weak interpersonal ties, and an innovative atmosphere is a catalyst for building a weak interpersonal network. The atmosphere is closely related to various scenarios, such as rich innovative activities, street art, nightlife, etc., to enhance social vitality and business interaction, attract, retain, and nurture innovative people and innovative enterprises. The existing science and technology parks in the urban area are located in the core area of the main city and often have a certain compact and mixed physical space foundation, such as Huanghuagang Science and Technology Park, Keyun Road, Longkou East Community, etc. At the same time, the limited space and the early construction period bring problems such as a single type of public space
and outdated facilities. Aiming at the main contradiction of limited development space, the optimization strategy can control and guide the interaction and continuity between the existing building space and the public space so as to expand the shared communication space with suitable functions and the public retail space with various choices. Therefore, the strategies for improving the openness of the existing urban renewal technology parks can be summarized as follows: focus on the combination of dots and lines in the surrounding area to create a public space with a continuous interface, encourage the opening of the ground floor of the building to improve the interface quality of the public space, and pay attention to street management to avoid sidewalks and subways. The entrance and exit become the storage yard for shared bicycles.

5. Conclusion

In the process of rapid urbanization, the urban design with the theme of continuation of the urban context adheres to the spirit of the "Beijing Charter", advocates cultural diversity, maintains cultural diversity, and adheres to the path of regionalization and modernization of modern buildings to demonstrate the Chinese characteristics of modern regional cities. The urban design of the two banks of the Pinghe River in the east of Foshan adopts the methods of extraction, abstraction, and construction and adopts the design idea of respecting the city’s history and culture so as to achieve the sustainable development of the city’s vitality and cultural continuity. Urban design that continues the urban context is not only a method to solve the specific urban space problems and contradictions but also an important means to build a beautiful urban space and achieve sustainable development.

Data Availability

The dataset can be accessed upon request to the corresponding author.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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