

Construction of Vitality of Public Space in New Urban Area: A Case Study of Honggutan New District of Nanchang City

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Abstract As display window of urban vitality, public space carries the colorful life of the residents living here and shows the spiritual outlook of a certain region. As a rising star, new urban area lacks historical accumulation and smell of fireworks when compared with old urban area. How to stimulate the vitality of public space in new urban area has become an unavoidable problem. In this paper, Honggutan New District of Nanchang City is taken as research object, to analyze the relationship between the representation of population vitality and the physical space in new urban area, and explore strategies for creating vitality of public space in new urban area.

Key words Public space, Vitality, Construction strategy

1 Introduction
With the rapid development of urbanization in China, urban population and urban land are expanding. The original central urban area has been unable to meet people’s daily needs, and some social, economic and environmental problems arise in the old urban area, while construction of new area becomes the universal choice of Chinese cities. In the development and construction of the new area, the pursuit of efficient and patterned operation makes the spatial recognizability low. For residents who are used to living in the old urban area, new area lack of context are not attractive enough. In the paper, common problems affecting the vitality of public space in the new area are analyzed on the basis of combing relevant researches. Moreover, Qiyunshan Community of Honggutan New District of Nanchang City is taken as research object. Based on field research and statistical analysis on the distribution characteristics of vitality subjects in different periods, change situation of vitality intensity and time dimension in each public space is understood, and different subjects’ perception and feedback on the use of public space are interviewed. According to the connection between vitality and space, the problems of entity space is found out, and the corresponding solutions are put forward.

2 Related concepts

2.1 New urban area New urban area indicates a region set up at the junction of the old urban area and the suburb of the city, which has main functions of the city and strong connection with the old urban area in a certain distance and internal connection. The new urban area carries part of the original functions of the old urban area and optimizes and upgrades them, expands the space of the old urban area, and perfects the deficiencies in the construction of functions, services and infrastructure in the old urban area. The construction of new urban area could generally embody the transformation of urban functions and the direction of urban development. Compared with old urban area, the development of new urban area has very strong will and planning, and lacks continuity of historical development.

2.2 Public space It refers to the use of urban public space in the daily and social life of residents, and contains streets, squares, parks, residential areas, sports and other places. Based on daily needs of urban residents, public space can carry out transportation, trade, performance, exhibition and sports, leisure, tourism, vacation, meeting and interpersonal communication. Public space is divided into open space and special space, and open space contains streets, squares, parking lots, green spaces, street green spaces, parks, gymnasiums, etc.

2.3 Vitality At present, there is no unified definition of vitality in urban public space. Jane Jacobs put forward that urban vitality came from diversity. Jiang Difei thought that vitality of urban public space indicated the ability of public space to provide humanized survival for citizens. Wang Yuzhuo put forward that vitality of urban space was the comprehensive ability of the material space in the city to attract and support people’s communication activities and people’s perception and identification of space places. The author thinks that crowd, crowd activity and objective environment are the three main elements of public space. Crowd is the main body of vitality in public space, and crowd activity is the expression of vitality in public space, and objective environment is their material carrier. Seen from the characteristics, public space has stability, cohesion and diversity. The three characteristics are usually manifested as the duration of crowd activities, the density of the crowd and the types of diverse activities.

3 Main factors affecting urban vitality

3.1 Design and environment The distance between buildings, the width of the road and the coverage of vegetation play an important role in people’s psychology and affect the shaping of urban vitality. It’s easy to make the distance between people open invisibly when crossing a wide road and a long street, which is dull and lifeless. In architecture, the combination of the older buildings and buildings of the current style is more likely to cause
the resonance of environment and people’s emotion.

3.2 Functions of public space  Place is the material undertaker of function, and the vitality of public space depends on enough people flow, and its main functions contain social communication, culture, business, entertainment, office and other aspects. On the one hand, diversity provides the possibility and premise for the diversity of consumer categories, while consumers with different consumption abilities and demands stimulate demand through consumption, which promotes the construction of corresponding stores and buildings in turn, thereby forming a virtuous circle and sustainable development. On the other hand, the public sphere is an important place for individual exchanging with society and a platform for personal development. The diverse place is to provide a harmonious and balanced place for people with different classes and backgrounds, making that everyone can have a certain sense of belonging and self-identity.

3.3 Interpersonal communication activities  Jan Gail divided people’s outdoor activities into necessary activities, spontaneous activities and social activities. Human activity is the most important factor in the vitality of public space, and public space of the city should provide necessary site support for these outdoor activities. Negative space elements will make people lose the desire to stay here, while positive space design should be the catalyst to promote the communication between people[4,5].

4 Case study—construction strategies for vitality of public space in Qiyunshan Community, Honggutan New District, Nanchang City

4.1 General situation of the region  Jurisdiction of Qiyunshan Community starts from Hongguzhong Avenue in the east, Financial Avenue in the west, Shimao Road in the south and Huizhan Road in the north. There are 6 buildings, 3 shopping malls, 2 financial units, 2 decorated buildings, 1 construction site, 5 podiums and 1 vacant building, with 502 enterprises and 77 individual businesses. The research range is southeast plot of Qiyunshan Community, where is composed of commercial and office buildings, and the research object is linear street space and area square space formed between buildings. The plot is located in the center of Honggutan New District, and there is Nanchang Municipal Government in the east, financial center in the west and residential area in the south. Metro Line 1 passes through the plot from the south, and Metro Tower Station is taken as the transfer station of lines 1 and 2, and its entrance and exit is located in the south of the plot, where a large number of people usually gather here. There are three bus stops on the east and west sides of the plot, with frequent flow activities. The building density of the plot is low. Except traffic road, there are many external spaces available for surrounding residents and citizens to gather and act, and they are mainly pedestrian street space and distribution square space. But the plot has high building height and volume ratio, and they are all office and commercial areas, with high population vitality. But it’s a short stay in public space, and the relationship between human and public space is not close. In this paper, Qiyunshan Community is taken as research object because that the plot is a typical representative of the central plot in the new urban area, and the economic, political and cultural center is surrounding the plot. As a block with large flow of people and vehicles and mixed functions, the organization of public space is relatively stable, and also has general characteristics of new urban area[5].

4.2 Vitality subject and current situation  The nature of the land around Qiyunshan Community is mainly commercial, office and residential land, and metro entrance is near the plot, with large flow and high vitality. The age distribution of vitality population is wide, but mainly young people. In this paper, the activity track of vitality subject in different ages is tracked, and their characteristics are summarized, to explore how can public space better meet people’s communication activities. The survey period suitable for people of all ages to carry out outdoor activities is studied. Finally, 08:00, 10:00, 12:00, 14:00, 18:00 and 20:00 are selected, and the activity amount, composition and behavior manner of the people in the area are observe and recorded.

4.2.1 Children. According to the survey, children’s activity time has the regularity of time, and activity peak is at 08:00 and 18:00, and the main activities are buying breakfast and playing after school. The amount of outdoor activities of children at 18:00 in rainy days is significantly lower than that in sunny days, illustrating that outdoor space lacks installment responding to different weather, which makes that outdoor activities are unstable. Moreover, children are usually accompanied by adults, who stay in the street for less than 5 – 7 min, mainly shopping. They will stay and play on the square for about 15 min, and it is because that the square facilities are single, and the space is not attractive to children. Therefore, the most outstanding characteristic of public space in the study area is its attraction to children.

4.2.2 Office workers. Office workers are main population in the space, and the duration of their activities is continuous. Work and rest characteristics decide that vitality is higher at 08:00, 12:00, 18:00 and 20:00. There are more office buildings in the region, and most shops along the street face this crowd, dominant by convenience stores, fast food snacks, drinks and desserts, to meet the needs of food, shopping, etc. Therefore, the vitality of this population lasts for a short time, and there is large flow in short term, which is easy to form crowd aggregation. But there is lack of luxury facilities in public space of this area, and office workers come and go in a hurry, lacking the perception of public space. The interaction between people is limited to customers and sellers, not a benign state of public communication. The life rhythm of office workers is tense, and their demand for public space is more to meet consumption while seeking spiritual comfort in public space. Therefore, more possibilities should be created to promote social activities in space design.

4.2.3 The elderly. The proportion of the elderly in the survey area is relatively small, and their activity time is random. Vitality peak appears at 18:00, and there is no crowd gathering. The region has obvious trend of youth from the nature of land use to the composition of business form. But seen from the survey situation, there is a large proportion of elderly owners in Haibo Lanting Community in the northeast corner of the plot, while public space’s response to this part of the population is still in short supply.

4.2.4 Social workers. Social workers exist in public space as spe-
cial office workers, and they not only are users of outdoor public space environment but also service for public space. Their activity time is continuous and does not change with weather, and it is because that social workers exist in public space mainly for work.

4.3 Problems of public space

4.3.1 Problems of street space. (i) Continuity. There are two north-south symmetrical carriageways in the survey region to solve traffic problems within the plot, and they are mainly used to evacuate vehicle circulation of parking lot. The road form is two-way two lanes, and guardrails are set on both sides and in the middle. Since the carriageway passes through a crowded pedestrian street, some interference to pedestrians is generated, and the continuity of walking space is interrupted. Moreover, the guardrail adopts the form of staggered opening to reduce the flow of pedestrians on both sides of the road, and this design does not achieve the expected effect, but increases the stay time of pedestrians in the roadway.[8]

(ii) Architectural form. Multi-floor or enclosed type and high-rise enclosed type can have the best impact on vitality of urban space. On the one hand, these forms can provide enough construction intensity, and it often means that there are enough people to use the plot. On the other hand, the form of slab or enclosed buildings ensures the infiltration and interaction of buildings and street space to a certain extent, which provides the possibility for diversified urban life. Except the number of floors of pedestrian street is low in the research region, landmark building of 303 m Twin Tower and Haibo Lanting Community in the northwest corner are high-rise slab houses. Irregular architectural forms are conducive to the gathering of vitality.

(iii) Format distribution. Diversity of formats is conducive to the promotion of space vitality and attracting people of different ages to come here to promote social activities. It mainly focuses on catering in the research area, and there are also electronic products, convenience stores, decoration, education and other types of business. They are layout linearly along the street or concentrated in the business complex, mainly on two sides of Qiuyue Road. In terms of existing business forms, the main consumers are young workers, and there are few businesses for other vitality subjects, embodying that the consumption object and spatial distribution of the formats are unbalanced in the space.[7]

(iv) Street facilities. Street facilities with strong regional functions include seats, street lights, dustbin, waiting booth, barrier free design, and these functional facilities of streets are important hardware to ensure the life of streets. But many settings lack consideration of human scale and psychology, causing the problem of facility vacancy and obsolescence. According to the observation, pedestrians would rather sit on the edge of the road chatting and calling than sitting on stone seats. The fitness and leisure equipment is surrounded by a wall around the building so that people can’t use it; the low brightness of street lamp weakens the business atmosphere at night; the setting spacing of dustbin is not adjusted according to the use needs, and these all affect people’s experience in space.

4.3.2 The problem of square space. (i) Traffic organization. The pedestrian flow line in the square is not clear, and people flow into the square from four directions. Moreover, there is no space guidance after entering, and people circulate freely. The weakening boundary leads to the mixture of non motor vehicles and pedestrians in the square space, and it is unsafe for pedestrians. Therefore, it should avoid the prolonged activities here.

(ii) Spatial form. The square in the research area is a face space formed by building enclosure, without specific form, and it has no obvious boundary with the transition of pedestrian street. The underground square occupies one third of the space, which blocks circulation of pedestrians, and the fault of space plane causes psychological sense of distance to pedestrians. The square scale is within the range of human comfort, but since there lack facilities in the square, the emptiness can’t keep the vitality, and the flow is just passing by. There is lack of human care, and participation is low in the square. Space form is single, and there is lack of personality, causing single use space.[8]

(iii) Infrastructure. The plane of the square is basically composed of hard pavement, with low rate of green space. Green space is only in the south, which is composed of dot tree pool, and tree pool combine with ceramic tile seat to form the open space of the square. According to the investigation, the number of people staying there was 23 during the survey period, with an average stay time of no more than 10 min.

5 Construction strategies

5.1 Starting from users’ experience and meeting the needs of different users Public space is a part of human settlements. People should not only walk in it but also rest, sit, play and wait in the street. This requires that people should be given priority in design. By necessity or spontaneous choice, people will have a rest, walk, work or leisure in public space. People of different ages and occupations have different ways of using public space and different needs for space[9]. The main vitality population attracted by the public space in the new urban area have a great relationship with the nature of the land use and the early development orientation. Although the design of public space mainly caters to the needs of the main vitality groups, the demand differences of multi-subject cannot be ignored.

5.2 Enriching space activities and creating characteristic space When public space has enough functional mixing, the vitality will be improved naturally. When studying and analyzing main body of vitality, it is found that different vitality subjects have periodicity. When considering the functions of space, flexible adjustment of functions can be made according to the occurrence period of different activities, which could improve utilization of public space but also enhance the richness of space activities, making different subjects join in the same site. When considering different functions of space, it should focus on concentration and dispersion of vitality, and set up space suitable for different communication modes in different positions. Semi enclosed space, arcade space, free space, and sinking space could combine flexibly to meet different communication needs and form space with different characteristics.

5.3 Paying attention to visual experience and enhancing spatial affinity In order to follow the trend of modern aesthet-
ics, the architectural form of modernism is also indisputable. But said from the perspective of psychology, tall and simple hard lines give people a sense of distance, and people are prone to depression in such an environment for a long time. Therefore, it needs adding appropriately flexible elements in the space, using curve in street furniture to neutralize the sense of toughness in space, and using colorful billboards to decorate the street facade to increase the affinity of the space.

5.4 Optimizing facilities and improving space quality The creation of facilities in public space should meet the functional requirements of different activities, and combine regional characteristics to enhance visual aesthetic needs. It should design indication sign of facility sketch with artistic flavor, which could not only improve the recognizability of space but also attract pedestrian attention to improve use frequency and prolong dwell time of vitality.

6 Conclusions
With the development of the city, vitality is becoming more and more important in public space. It illustrates that people-oriented concept is emphasized more and more in design of cities. In this paper, influence factors on vitality in public space of new urban area are analyzed. Moreover, taking Honggutan New District of Nanchang City as an example, the running states of different vitality in public space of its central plot are analyzed, and the problems existed in public space are explored. Since the plot has prominent characteristics of new district center, it has broad representation, and the proposed strategies to stimulate the vitality of public space could provide the reference for new areas of other cities.

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