Research and Enlightenment to China on Identification and Evaluation of Architecture Public Open Space in New York POPS Management and Control System

Ying Shi\textsuperscript{1a}, Qirui Qin\textsuperscript{2b}

\textsuperscript{1}School of Architecture, South China University of Technology; State Key Laboratory of Subtropical Building Science, South China University of Technology, Guangzhou, Guangdong, China

\textsuperscript{2}School of Architecture, South China University of Technology, Guangzhou, Guangdong, China

\textsuperscript{a}aworksy2004@126.com, \textsuperscript{b}330743591@qq.com

Abstract. Architecture public open space is an indispensable part of urban public open space, and its construction is a long-term and sustainable process. Some mainland cities and regions in China began to pay attention to the role of building public open space in urban public space from the 1990s and relevant incentives were formulated when land was sold. However, due to the lack of a targeted and complete control system, especially the lack of identification criteria for architecture public open space, the construction, use and maintenance of architecture public open space are unsatisfactory. Based on the study of New York’s POPS management and control system, this paper summarizes the experience of identification and evaluation of architecture public open space in order to provide inspiration for the establishment of identification and evaluation system of building public open space in China.

1. Introduction

Urban public open space is the carrier of people's life and an important part of urban space. Generally speaking, urban public open space mainly includes large-scale city square, green space, parks and so on. With the increase of urban population and the demand for urban construction, it is more and more difficult to divide independent urban public open space, especially in the core area or other important areas of the city. This leads to the lack of quantity and quality of urban public open space. Since the 1930s, urban complexes began to appear in New York. The construction of Rockefeller Center made people realize that the public space built on private land can well complement the shortage of urban public open space, and good maintenance and operation can bring high-quality public open space. The government had begun to encourage land-use units to provide part of the space for public use within the building lot. The space is called POPS (Privately Owned Public Space).

Architecture public open space is a place of activity in the building lot, which is open to the public all-time (or time-sharing based on public safety factors) for the public to pass or stay.

Architecture public open space in China has begun to practice since 1990s. Although many architecture public open spaces have been built under the guidance of policy, planning control and...
urban design, due to the lack of a targeted and complete control system and the identification and evaluation system of space, they have not achieved good results. The POPS control system in New York has achieved good results in improving the urban spatial environment of New York after years of exploration and practice. The POPS identification and evaluation system in New York established the main foundation for the sustainable construction and development of public open space.

2. Research on POPS Identification and Evaluation in New York

The design and management process of POPS in New York is divided into three stages: Design Control and Guidelines before construction, identification and evaluation, and subsequent management operation and upgrading design.

Design Control and Guidelines refers to the guidance and control of POPS design, including the space type, space form, infrastructure and so on. Identification and Evaluation refers to check and confirm whether the design scheme of public open space meets the design criteria before construction, and to inspect the spatial information and the usage status by visiting POPS after completion, so as to verify the usage of space and to reflect and summarize the problems in use. Management and Operation and Upgrading Design refers to formulate management operation system, establish public participation, and improve the space according to public use. The three processes complement each other and constitute the design and management process of POPS. As one of the links, the Identification and Evaluation system not only tests the design control guidelines, but also provides design basis for subsequent management, operation and upgrade design.

2.1 Establishment and Development of POPS Control System in New York

In the 19th century, due to the sweeping tide of capitalism, a large number of buildings symbolizing capital force sprang up like mushrooms after a spring rain in New York. At the same time, it brought problems such as inadequate lighting and traffic congestion. Although the 1916 Zoning Resolution proposed to control the height of buildings in order to ensure sufficient space and sunshine at the bottom, driven by commercial interests, most developers chose to maximize the coverage and outline of buildings, and public space suffered greatly. Under this circumstances, the New York City Planning Commission adopted a new zoning resolution in 1961. The resolution proposed POPS for the first time, stipulating two types of POPS space: square and corridor, and rewarding the floor area ratio for POPS. This resolution has played an effective role in controlling the architectural form and returning the underlying public space. Since then, POPS in New York City began to flourish.

Although the number of POPS had increased substantially, the quality of POPS was generally not high, and the privatization was serious. It was because that POPS was As-of-Right, the scheme was submitted for review only as an annex and usually only needed to be checked by Department of Buildings (POPS in the special purpose district needed to be checked by Department of Buildings and City Planning Commission). Floor area rate reward could be obtained by satisfying the Zoning Resolution. The procedure of approval and confirmation was simple and the government never checked and evaluated the completed space. Most as-of-right plazas lacked the necessary facilities such as tables, chairs and water dispensers, which were inconvenient for daily use. Some POPS building materials were of low quality, such as concrete and terrazzo, which reduced human comfort. Some sellers placed private tables and chairs in space and set up fences around them, only allowed consumers to use the space.

In view of this, the New York City Hall established a research team in the early 1970s to study the construction and operation of awarded and non-awarded squares and private parks, which initiated the research of evaluation. After this study, the zoning resolution was amended, higher design standards were proposed, and stricter "Certification" approval and identification procedures were introduced. In 1996, Jerold S. Kayden, Professor of Harvard University and founder of POPS, united the New York City Department of City Planning and the Municipal Art Society of New York to evaluate and study 503 completed POPS in New York, which called The New York City Privately Owned Public Space Project. Its purpose was to summarize the existing problems of POPS through field research and
analysis, and to establish a complete and open POPS database, in order to prepare for the upgrade of POPS and the improvement of policies.

2.2 Identification and Evaluation System of POPS Control System in New York

The identification and evaluation system of POPS can be divided into two parts: identification and evaluation. Identification is based on space planning and design control guidelines. Before applying to construction, the scheme needs to be certified and approved by the relevant departments, and after completion, the site acceptance is used to determine whether the public open space conforms to the design and construction standards. Evaluation is based on the use of the public, through field research or visits to users, to evaluate the potential use of public open space.

At present, there are three types of approval of POPS in New York City: As-of-Right, Certification and Discretionary. The procedure of approval and confirmation of As-of-Right is the simplest. It is suitable for the construction of arcade with lower requirements. The scheme can be implemented only through the approval of the Department of Buildings and in accordance with the Zoning Resolution. For the district of special use, they need to be approved by the Department of Buildings and the City Planning Commission. The procedure of approval and confirmation of Discretionary is the most complex. It is suitable for major projects. After passing the special permission of the City Planning Commission, it is necessary to organize professional groups and community committees to hold several rounds of public hearings to absorb public opinions. After passing the public hearings, the plan will be jointly authorized by the City Planning Commission and the City Council, and determined by the Department of Buildings to be in conformity with the Zoning Resolution before the construction can be implemented. Certification is the most common type of approval confirmation and suitable for general public plazas. This process requires the President of the the City Planning Commission to intervene in deciding the legitimacy of the public plaza, and after approval and confirmation by the Department of Buildings, the construction can be carried out. In order to avoid the low-quality POPS more effectively, it is necessary for the public square to pass on-site acceptance before it can obtain the building use permit.

A comprehensive evaluation study of POPS in New York City began with The New York City Privately Owned Public Space Project initiated by Jerold S. Kayden in 1996. The research relied on long-term experience observation and user interviews and focused on three aspects. The first was the actual use of the public, including the occupation and age of the users, aggregation trends, equipment use and other behavioral characteristics, as well as public observation and evaluation of space. The second was the design elements and operation of space, such as size, shape, location and materials, and attention to how these designs supported public activities or prevent potential uses. The last was the owners' opinions on space maintenance and management.

Through evaluation research, Jerold S. Kayden classifies space into five types according to its quality and actual use. They are destination space, neighborhood space, hiatus space, circulation space, and marginal space. Destination space is a space that can attract the public to stop and gather for activities. It is usually spacious and bright, with high quality materials, abundant facilities and high quality. Neighborhood space, like destination space, is also of high quality, but mainly attracts residents and employees nearby. Hiatus space is a small area usually next to the sidewalk with simple seats. It can accommodate pedestrians to stay for a short time without strong attraction and uneven quality. Circulation space is mainly for people to shuttle through, and shelters will be set for weather reasons, but there are no recreational facilities. Marginal space is the lowest quality space with poor design level, lack of facilities and unsatisfactory public use.

Kayden's research on POPS evaluation lasted three years, and finally established an online open POPS database in 2000. The database includes twelve parts, including general information, legal basis, zoning computations and so on, as a means to encourage the use of public space, increase legal compliance and strengthen consideration of public policy issues.

Today, in addition to the open database, the Municipal Art Society of New York specializes in setting up POPS topics on the Internet, encouraging the public to score POPS online according to their
actual use experience, and making suggestions for improvement. Some non-governmental organizations, such as APOPS, will also participate in the discussion of POPS usage evaluation and upgrade to prepare for the improvement.

3. Current Situation of Identification and Evaluation of Architecture Public Open Space in China
In the mainland of China, the control of architecture public open space began in the 1990s. In 1992, the Ministry of Housing and Urban-Rural Construction of the People's Republic of China proposed the first regulation on architecture public open space. It stipulated that if the owner provided open space or facilities for the public, after approval by the competent administrative department of urban planning, floor area rate reward could be obtained. Since then, other areas have also issued design guidelines and incentives for architecture public open spaces.

Although these areas have made relevant regulations on architecture public open space, the exploration in China is still in its infancy. There have been guidelines for the construction of architecture public open space, but lacking the identification and evaluation procedures which makes the space’s quality and effectiveness difficult to guarantee, and the benefits of architecture public open space greatly reduced. For example, due to the inadequate implementation of the landscape design and facilities design in the construction of Futian Core Area of Shenzhen, many squares are large and empty. Under the hot and rainy climate of Shenzhen all the year round, they bring discomfort to the public. Therefore, few people stay on the squares during the day, and the space vitality is insufficient.

The lawn in front of the Guangdong Museum has been fenced to prevent the public from entering and using all year round. The absence of identification and evaluation system of architecture public open space not only damages the public's right to use, but also makes the original high-quality destination space become the low-quality marginal space. Due to the absence of standards and procedures for identification, these spaces can hardly be identified as real architecture public open space. They neither meet the design standards nor bring good use experience. Also, lacking of evaluation and feedback system, there is no way to complain about problems in the using process and the demand for space quality. The goal of architecture public open space to serve the public and improve the quality of urban space can only be a good vision, which is difficult to achieve.

4. Enlightenment of New York POPS Identification and Evaluation Research to China
The three processes of architecture public open space are indispensable. In order to make the architecture public open space serve the people better, it is rather important to establish and improve the identification and evaluation system of the architecture public open space.

First of all, it is necessary to formulate high and refined identification standards for architecture public open space. As a rigid index, the identification standard can maximize the basic quality of architecture public open space, while the rough design standard will cause of the low-quality space. Therefore, this proposal should be considered in combination with the previous design standards. Subdivide the types of architecture public open space referring to the design standard of POPS, such as arcade, plaza, sidewalk widening and so on. Specify the general contents of the form, size, facilities and opening time of architecture public open space of each type. Only by guaranteeing the high standard and fine identification standard can ambiguous identification be avoided.

The second is to strengthen the system of examination and acceptance. The as-of-right POPS enabled developers to obtain floor area rate award without review and acceptance in the early stages, resulting in a lot of space that did not meet design standards and use requirements. Therefore, it is necessary to organize relevant departments, not only to review the design scheme of architecture public open space, but also to check and accept it on the spot after the completion. Relevant measures should be taken to control the architecture public open space that do not meet the design and usage requirement. Also, punishment measures should be taken for developers and owners who do not comply with relevant regulations.
Last but not least, the post occupancy evaluation system should be formulated. Comparing with the compulsory nature of the identification system, the evaluation system is flexible. It reflects on the problems through the actual use of the public, predicts the use, and paves the way for higher requirements of design standards. In the evaluation, human is the core of design. Excellent design takes human behavior and habits into full account, but in the actual design process, comprehensive consideration is often difficult to achieve. Therefore, it is necessary to grasp the general psychological and behavioral needs of the public through on-the-spot observation, crowd interviews, setting up online ratings and other means. Only by evaluating the advantages and disadvantages of design from the user's standpoint can we overcome the empiricism and subjectivism in design and truly realize the human-oriented design.

5. Conclusion
Architecture public open space plays an important role in providing space for public activities and improving the quality of urban space. The long-term experience of POPS management and control in New York has brought some enlightenment for the construction of architecture public open space in China. At present, the management and control of architecture public open space in China still remain in the design control and guidelines, and had not been involved in the identification, evaluation, management, operation and upgrade design. It is necessary to further explore the identification and evaluation system for the development and construction of architecture public open space which is suitable for China's national conditions, so as to better promote the construction of architecture public open space in China.

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