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Orientation and Guiding Control of Urban Public Exhibition Space: Base on Mixed-use Function

Zhu Xiaoqing, Sun Jiaojiao and Fu Jiayan

College of Civil Engineering and Architecture, Zhejiang University of Technology, Hangzhou, China

Abstract: Based on the construction and operation mode of modern urban exhibition complex, the study compares the exhibition architectural theory and development mode at home and abroad with the clarification of the media mechanism of the exhibition complex as a city culture spatial carrier. On the one hand, it is to optimize the mixed-use construction of urban exhibition complex through the analysis of diversity and complexity of urban exhibition. On the other hand, as to the running and control of events and places, the operation pattern with the “characteristics of city context” is proposed with the construction of “public-participated” control system, so as to improve the public media performance of urban exhibition complex construction.

Key words: Exhibition complex, media, mixed-use, construction, control

INTRODUCTION

As a kind of cultural carrier, urban exhibition complex tends to provide diverse information and activities for citizens through the exhibition of various themes, thus becoming one of the important items for the cultural life of citizens. From the type-oriented point of view, modern urban exhibition complex attempts to combine social activities with urban construction outlook and achievement mainly through ways of "visiting" and "participation". The basis features of modern urban exhibition complex are it scientific, informational, public and diversified natures which are reflected by various means and functions along with the open, diversified and ecological modern spatial form. Meanwhile, due to the individuation limitation of the self-development of each city, the construction and operation of urban exhibition complex should first highlight the “hierarchy” principle of the city context, then focus on its “interactive” means as the window of city and finally emphasize the “specialization” content the connotation of urban development.

MATERIALS AND METHODS

Architectural model evolution of urban exhibition complex at home and abroad

Overview of the development context of urban exhibition complex: The evolution of the urban exhibition complex is divided into 4 phases (Table 1). Due to the impact of multiple social factors such as politics, society, economics and technology, it gradually transfers from the professional characteristics to the diversified characteristics in the functional aspect. While in terms of service object, it has been expanded to the ordinary people gradually from a small amount of nobles. The modern sense of urban exhibition complex is no longer limited to the field of art and humanity. Instead, it has extended to fields such as economics and technology with the formation of the diversified and multi-level information system. The improvement of information transfer function by urban exhibition complex has led to the change of the corresponding transmission means, transmission routes and transmission forms (Cui *et al.*, 2012).

Table 1: Developing tread of urban exhibition buildings

Construction background	Budding period	Start-up period	Molding period	Prosperity period
Historical period	Handicraft age	Steam age	Electric age	Information age
Functional composition	Important buildings such as temples and churches are taken for the use of exhibition	Reconstruction of old buildings	Large national specialized exhibition buildings	Diversified buildings reflected in nature, classification, function, architectural style, etc.
Typical case	Pinacotheca	Medici mansion	Opening of louvre	China pavilion of shanghai world expo
Operating mode	Visited by a few nobles	Visited by a few nobles	Participated by many upper class citizens	Interaction and participation of ordinary people

Corresponding Author: Zhu Xiaoqing, College of Civil Engineering and Architecture, Zhejiang University of Technology, Hangzhou, China

Discussion of the development trend of urban exhibition complex

Regional identification of the exhibition space: Urban exhibition complex displays the evolutionary history of the city to make people understand the characteristics of the urban context, demonstrates the urban construction achievements to reflect the modern urban life of people and show the urban construction in the future to foresee the future development trend of the city. In a word, urban exhibition complex covers a historical span from the ancient time to the modern time and a social span from the urban areas to regions. It conducts exhibition from both the vertical and horizontal levels and it contains two kinds of logical relationship with the urban logic (Table 2). (1) Exhibition complex helps to improve the urban display system in a unique way of museum collection and display and (2) Exhibition complex helps to establish urban information gathering and distribution system with professional features.

Displaying of the mixed-use trend of media: Displaying is a basic function of urban exhibition complex and it is mainly applied to the traditional urban exhibition complex with supplement of education, research, office and logistics. It starts to serve the society with the development way of mixed-use, to become a complex of various activities displaying and facilities service. The functional diversification has led to the place diversification with many other features such as multi-purpose halls, cinemas, shops, restaurants and educational facilities getting more spatial independence

instead of maintaining their original functional meaning. The traditional individual buildings have become numerous and jumbled building groups such as the Getty Center in the U.S.

Visual perception replaced by full experience: The development of urban exhibition complex and cultural art concept has been well acknowledged and realized by modern society (Fig. 1) which promotes the replacement of visual centralism with human body and emotion in the urban exhibition complex to become a new aesthetic value-orientation. In the process of full experience, many new technologies and methods in the fields of shape, color, material, lighting, sound, textual illustration, image and model are widely used, particularly the widespread application of electronic technology and communication technology which make the displaying process convenient and with the expansion of information capacity, so as to improve mutual communication between the audience and the presented information (Chen *et al.*, 2011).

RESULTS

Mixed-use construction

Mixed-use composition of the exhibition complex: In fact, urban exhibition complex refers to a place of information dissemination whose content is contained with information. The functional property of information determines the order and form of interior display space of the urban exhibition complex. Mixed-use such as urban

Table 2: Logical relationship between the exhibition complex and logic

Logical relationship	Specific content	Specific case - A case study of Hangzhou
Improvement of the urban display system	Awareness of its own sense of features	Hangzhou History Museum: A comprehensive reflection of the local history of Hangzhou
	Seek for quality rather than quantity	China Tea Museum: A reflection of national history with the theme of tea.
	Display of urban construction result	
Establishment of urban information gathering and distribution system	Bearing relics	Grand Canal Museum: A display of Canal-related historical culture
	Establishment of core cultural sites	West Lake Expo Museum: a display of industrial development process in Hangzhou
	Expansion of reputation worldwide	

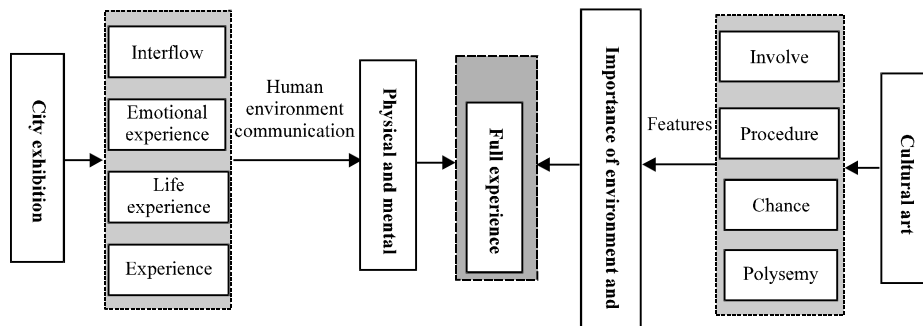


Fig. 1: Common view of urban exhibition complex and the cultural art concept (Tschacher and Trondle, 2011)

activities, regional culture, leisure and business and public education are effectively embedded into the urban exhibition complex taking displaying as the theme in public media which indirectly enhances the integrity of supporting, strengthens the market position and enriches the role of city catalyst in content, thus becoming the “embedded exhibition building” with diverse usages, objects and directions.

Features of the mixed-use mode display media

Public welfare media of discipline science popularization: Urban exhibition complex aims to increase the enthusiasm of non-professionals to science exploration and make ordinary people understand the science discovery, thus stimulating their curiosity in the exploration process of science and technology principles and learn knowledge in their own way. Therefore, urban exhibition complex should be in line with the following principles in its content setting and display ways (Table 3).

Extracurricular academic education base: The intuitive knowledge carrier in urban exhibition complex such as model and scenario simulation has established the relationship between abstract theoretical concept and tangible city image, so that students will be able to understand the relationship between theoretical study and practical analysis and reduce the gap between professional knowledge and social cognition (Timmons, 2001).

Free rally exchange place: Urban exhibition complex should be an open space for urban construction and rally exchange with the provision of communication places and facilities. As for a specific display theme, the holding of national or international urban forum, work exhibition and related academic exchanges will compensate for the lack of urban construction achievements presentation and deepen the communication of exhibited content among practitioners.

Display of interaction and participation of the mixed-use mode

Information between the public and the government decision-making departments: In order to avoid significant negative impact caused by wrong decision-making by the government, urban exhibition complex should establish the mixed mechanism in combination of public participation (Table 4), thus becoming the major media for urban environment construction decision-making and the major place for public participation of decision-making aid, so that the citizens can have true awareness of the short-term and long-term urban construction by the government to participate in the urban environment construction decision-making, so as to affect the development and implementation effect of urban construction planning.

Characteristic strengthening of the public intention and city context: Urban exhibition complex not only plays an

Table 3: Principles of content setting and display ways of urban exhibition complex

Principles	Notes
Principle of popularization and generalization of the display content	Popularization of the exhibition content, and avoid incomprehensible technical terms Systematization of disciplinary knowledge with the formation of easily understood knowledge framework
Principle of interaction and openness of the display ways	Increase of touchable exhibits with the change of the traditional introduction mode Turn visiting into activity exchange by making use of films and videos
Principle of aesthetics and mixing of the display space	Mixing of the exhibition space with the rest space Mixing of identifiable space with suspended space

Table 4: Specific participation ways for citizens in urban construction decision-making

Participation ways	Specifically participation process (Poplin, A., 2012)
Regular information release	Regular information release interval is determined through public opinion polls, exhibition complex and joint discussion of the government Citizens can provide opinions, suggestion, and other information feedbacks through forms of telephone, text messaging, forums and websites
Openness of the public forum	Exhibition complex determines the holding time of public forum in advance with the publicity release on behalf of the government departments and citizens Social groups, government officials, and professionals in relation to the content of the forum theme are invited to give opinions and suggestion in turn It is to attract citizens to attend the forum with the presentation of relevant speeches depends on the favorable geographical condition of the urban exhibition complex
Construction of the dedicated website	Planned construction target of each constructional phase is released with the specific activities arrangements for the next phase of decision-making citizen Set up platforms such as e-mail and on-line forum, to collect relevant opinions and suggestion of environment construction by citizens timely Professionals and government officials are invited for real-time citizen doubt feedback and mutual information interaction and communication

Table 5: Specific operating methods for urban exhibition complex intention annotation

Name of the method	Specific operating method
Questionnaire	Understanding of key elements of urban construction such as road system, landscape system, and space system Conducting detailed design of questionnaire through landmarks of Hangzhou Mastery of the cognition condition of city features by ordinary people
Spatial annotation	Historians and building professionals are required to describe a certain kind of characteristic with language and graphics, etc. Statistical analysis of the advantages and disadvantages of the distinct place should be conducted with the drawing of relevant conclusion Relationship between aesthetics and behavior should be considered with the proposal of important theories for guidance

important role in the preservation restoration and enhancement of urban construction, but also provides possibilities for the current dynamic presentation. The imagery annotation taking questionnaires and spatial annotation as the main operating method (Table 5) should be embedded into the urban exhibition complex. Based on the analysis result of the public construction status intention annotation, city construction workers should adapt to the different spatial modes of the city structure as well as the characteristics of the new and original city, so as to be engaged in worthwhile and distinctive design (Chen, 2011).

Information interaction of the public with urban construction: As an important function of urban exhibition complex, the public display of construction achievements aims to have full awareness of the opinions and suggestion to major urban section construction by all circles of society and the public, so as to promote the comprehensive arrangement of future urban development and construction by citizens, pre-emptive the likely difficulties and conflicts that may appear during the implementation, monitor the actual process of each phase in urban construction, ensure the smooth implementation of construction and balance the legitimate interests of each group in the city.

DISCUSSION

Operation and strategies for urban characteristics exhibition

Exhibition forms based on the characteristics of “urban construction”: Urban exhibition complex takes urban construction as a kind of urban cultural accumulation for exhibition which is significant due to its complex level composition and profound accumulation. Meanwhile, this cultural accumulation system must be dynamic and open because of the characteristics of the city itself. The continuous composition of levels and accumulation of information will definitely promote the constant renewal of the exhibits of urban exhibition complex, so as to realize the sustainable development (Tippett *et al.*, 2007).

Information openness of “construction stratification”

mode: City is a giant complex system with each level bearing the same task due to its unified disciplinary affiliation. However, the specific operating method for the same task may be different because of the different urban scales of the operating objects. Urban construction is closely related to various elements of urban composition as well as social elements such as urban history, culture and politics. In addition, it is restricted and affected by the government functions and people’s life. Urban construction stratification tends to make those complex relationship even more complicated which provides vast information basis for the sustainable development of urban characteristics construction exhibition objectively.

Process of urban construction evolution: The history of urban development is long with varied urban space construction. First, the urban space development of each phase is dependent on different objects and urban construction behaviors, the left substance or implied information of which have been used to interpret the development of urban construction with the formation of abundance in historic information of urban construction. Second, the content for information presentation can still be re-interpreted and re-valued constantly. Third, the new historical archaeological excavations discoveries will certainly expand the existing exhibition content in the exhibition hall. In summary, the characteristic display goal of urban exhibition complex should be a complete record for the spatial historic evolution of the city. So it needs to accept new information constantly to get closer to this goal.

Vertical superimposed information organization of the system

system: Sustainable development of the information presentation of urban exhibition complex can be organized in two levels of the system and the practice, to mainly collect the construction information that could mostly reflect the city features. The information with the same feature should be organized into one category for distinct system presentation such as the utilization and update of water resources. The realization of sustainable concept

is based on the vertical time factor for the realization of vertical superimposing of practical achievements. The dynamic presentation system of hyper-textual display network shows the quick view system whose trunk is classified according to different themes. An in-depth research system for each theme is classified according to different times. The intersection of the two classification systems forms the hyper-textual nodes which allow audience to view the nodes quickly and choose the entering of other themes for participation regardless of the location.

Space utilization and reconstruction base on POE: In the urban exhibition complex, the display information and display space are with reciprocal causations and the sustainable development of the display information will certainly lead to the corresponding change in display space. POE method or the post-occupancy evaluation (POE for short), refers to the measurement of constructed buildings through certain procedures, so as to see if the actual use effect of the building has been in line with the expected method. Parameters such as building function, physical property, physical property, environmental and social benefits and users' psychological feeling have to be investigated. Therefore, the balance of display information and display space can be coordinated with the method of POE, to realize the sustainable development of display space.

The integration of fixed display space with temporary display space: The display space should be adjusted timely with the integration of fixed space and temporary space. The original advantage of the exhibition hall can be maintained by fixed space to attract new audience constant for the original exhibition. Besides, new display information can be provided to audience through the varied space to attract them with new and fantastic exhibits. It can be said that the audience flow is the vigor and vitality of the exhibition complex and the temporary space is an important factor for sustainable development of the exhibition complex.

Integration of actual display space and virtual display space: With the development of digital technology, virtual display has become a trend which owns the following advantages compared with actual exhibition space. First, most of the contemporary urban exhibition complex belongs to embedded exhibition complex, in which the constant indoor space expansion cannot be achieved with the existing limitation. While virtual display space can turn the exhibition content to electric information with the

digital technology, to shorten the occupation of new content for the actual space. Second, city construction is kind of three-dimensional art. The paper-based media in reality can only show the two-dimensional graphics which will reduce the realistic sense due to miniature scale. While virtual space can reflect the relatively real urban space with three-dimensional emulation technology, so as to realize the real experiential visit. However, in the process of sustainable development of display space, the virtual space still cannot completely replace the actual space, for the latter can be touched and felt in real life as an animated exhibit arousing the audience's real feeling.

CONCLUSION

As an important cultural transmission place, urban exhibition complex has gradually become more and more diversified, open and humanistic. The basis function of urban exhibition complex is display, through which, the mixed-use display system is formed in the following aspects. First, dynamic display shows the latest urban construction dynamic to realize interaction and communication between the public and professional departments, so as to strive for the virtuous circle of urban construction. Second, target display shows the expertise of urban construction to achieve interaction and communication between teaching and learning of scientific knowledge, so as to strive for the public humanity quality improvement and construction industrial prosperity. Third, feature display shows the objectification system which reflects the urban quality to realize interaction and communication between the active and passive identification of regional culture, to strive for the perception and transmission of urban regional culture. Each of the above display function implies complicated social relationship constituted by human, events and places interaction in the urban exhibition complex. Although, they belong to the objectification characteristics of "commercial space, education platform and leisure place", their existence exactly reflects the multi-function and multi-level service of a culture institution to the society. Meanwhile, as a living body of the city, urban exhibition complex must seek for effective ways to achieve the sustainable development displayed by urban characteristics. Three elements of "information, space and vitality" have constituted the existent signs of urban exhibition complex which is also the starting point for their long-term existence. Through various ways of sustainable development correspondent to the three elements, it is likely that urban exhibition complex can achieve long-term and satisfactory development.

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