International Journal of Social Welfare Promotion and Management
Vol. 3, No.1 (2016), pp. 101-108
http://dx.doi.org/10.21742/ijswpm.2016.3.17

Comparative Analysis of Public Space from Urban Sustainability

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Abstract

As the main public building representing a city, the city hall is positioned easily accessible to the citizens. In addition to the plazas, it plays a role of embodying the livelihood of urban residents. This study examines the design competition for the Chuncheon city hall from urban sustainability, in the internal aspects of the building as well as the areas external to the building from an urban perspective. By comparing 4 proposals of design competition, the way in which common space can enhance urban amenity and effectively manifest the mobility of urban residents, as well as the flexibility to cope with future expansion and exchange. According to the environmental and technological terms, the most important aspect is passive circulation, which must be considered as a significant planning gesture, which is able to coordinate the various planning elements in order to achieve successful environmental sustainability.

Keywords**:** *Urban Sustainability, Comparative Analysis, Proposals of Design Competition, Public Space, Common Space, Passive Circulation, Urban Amenity, Mobility, Flexibility*

1. Introduction

As the main public building representing a city, the city hall is positioned in a prominent location that is easily accessible to the citizens. In addition to the plazas, it plays a role of embodying the livelihood of urban residents. As urban publicity and sustainability become highlighted as important issues, the changes in architecture of public institutions may be considered as the most important aspect for the realization of a sustainable city for the citizen. This may be considered as a positive change, which is occurring around the world, and the phenomenon is observed in the design proposals of recent city hall design competitions in Korea as well. Chuncheon city hall project, which was put into effect via a public competition for the purpose of urban regeneration in terms of urban sustainability [1]. Through this project, design directions considering urban publicity can be understood from various perspectives. This study will be processed by examining 4 design proposals exhibiting a diverse range of creative design directions in terms of urban publicity and sustainability. Through a comparative analysis of the site plan, floor plan, and section, rather than suggesting planning aspects

Article history:
Received (July 28, 2016), Review Result (September 13, 2016), Accepted (October 24, 2016)

Print ISSN: 2205-8435, eISSN: 2207-5321 IJSWPM

for the realization or urban sustainability, this study is able to suggest the primary planning potential of public and common spaces.

2. Theoretical study

Historically, Robert Venturi claimed that modern architecture, unlike gigantic, inhumane modernist architecture in the past, should be inclusive while being friendly to the public and expressive of public's desires. And Kevin Lynch, who introduced the concept of "public image" in city planning, focused on the relationship between the city's and the public image. He studied the structure and characteristics of the urban scene's image and the way in which they function in configuring the urban scene [2]. Another study direction for cities is Figure and Ground theory. A building exists not just for its own sake, but also as a type of "Figure" to support the "Ground" [3], the latter of which is an empty space or place according to the Figure-Ground theory. Therefore, the building's meaning and experience depend on the entire urban context, and becomes important in the image of the urban form.

In the contemporary urban situation, public space embodying publicity can be examined in two ways. The first, being related to function, is whether a person has accessibility to this space without regards to time and class as long as they act within the law. The second, being more morphological, is what kind of relation the space forms with the surrounding environment in the context of the city. If you look at the function of the city hall, it has recently evolved beyond the government office toward the combination of management and culture holding a variety of cultural contents. Accordingly, the city hall plaza has taken on a greater public role, making it possible to consider enhancing its connection with the cultural spaces within the city hall.

The first direction is increased participation of citizens. The lobby in the main entrance is open to the public, possible to enter the government office directly from this location which decreased the sense of distance. Secondly, local community facility space can be suggested. Generally, "Cultural Space" refers to a specialized space for purposes related to fine art. The early public city halls were small and confined in terms of scale and there was not a great demand for cultural activity. The third one is an extension of public space. A building, being an occupant of the city's space, must contribute by providing public space. By providing well needed open space in a highly congested city, the public city hall expands the citizen's life space and increases its quality.

3. Analysis from urban context and sustainability

In Korea, public office buildings have changed as local governments took responsibility for their construction since 2000s. For this reason, the construction plans for federal and local government office buildings have skyrocketed, while revealing issues with utilizing old buildings along with the decline in the old section of cities. Hence, the architecture of recent government buildings considers the images shown from the entrance level and diverse activities taking place as primary elements for the realization of urban publicity. By controlling not only the horizontal, but also the vertical connections between the common spaces and semi-public spaces where civic activities are held, a more active spatial planning was pursued. In addition, a tendency can be observed for extending territory where internal functions can be extended physically and visually, not only internally, but externally as well.

From the perspective of the "Ground" [4] which represents opposite meaning of the "Figure", we define the way in which to represent urban sustainability as passive circulation[1], in the environmental issue, amenity from the contemporary surroundings, mobility in approaching accessibility and flexibility in functional and cognitive extensibility.

Urban sustainability in the contemporary city, implies a propensity for continuance that may be realized by various spaces, people, activities, and images.

The first element is passive circulation referring to the sustainable architectural requirements in the environmental sense. The most important planning requirement for sustainable building is to plan for natural circulation and self-sustainable measures for temperature control of the internal environment without any mechanical devices. The Second one is amenity, which is open for the urban residents or the users in public space. It can play a role of giving an image of sustainable city that urban residents can enjoy. And it also forms new memories, serving as an amenity area [5] that enables breaks, meetings, memories, events, *etc*., among commercial areas [6]. The third element is mobility including accessibility. It becomes a circulation-based concept that includes aspects such as entering into the facility from outside, reaching outside from within the facility, and the free flow of movements within the facility [7]. Finally, "Ground" creates diverse and flexible situations. Depending on the type of surrounding and grouped features of the building, the ground can provide both a semi-external and a semi-internal sense of space. Depending on the acceptance of situational programs, the open space can be changed to become a stage or a service space for extended use of public spaces or temporary events.

4. Comparative analysis of architectural planning

4.1. Site planning concept based on urban context

A comparative analysis of the layout and concept diagrams of each proposal, which reveals the layout concept and method of approach considering the urban context and natural environment, was conducted. In the proposal 1, the major concept of site planning from the perspective of urban context is the harmony with the city and the arrangement that maximizes the use of the Bongui Mt. terrain. And the specified concept can be explained as the following inclusion of urban fabric, accessibility, clear zoning, and the harmony with the city's context. In the proposal 2 shows strategic programing aimed at creating locations which in turn open up space and becomes a plaza circled by the surroundings. And in the proposal 3, there is the integration of the citizens and the city which coexists with the mountain, lake and culture. Finally, proposal 4 describes the efficient use of land and the environment friendly park plan for the citizens. The city hall is located in the back side of the land allowing a larger park to provide to the public. Additionally, the positioning allows harmony with the pre-existing registered cultural properties.

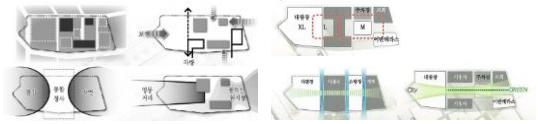
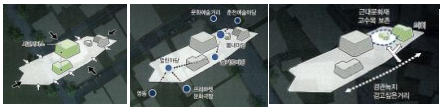
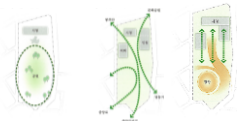
Proposal 1	Proposal 2	Proposal 3	Proposal 4
			
			
Harmony with the city and the arrangement that maximizes the use of the Bongui Mt. terrain	Strategic programming for place-making opening up the spaces and plazas	Integration of the citizens and the city which coexists with the nature	Environment friendly park and positioning.

Table 1.

4.2 Planning characteristics of common space

A comparative analysis of the spatial layout of each proposal was conducted by examining the detailed plans of the floor and sections and focusing on the lower part of the main building where the common and public programs, which play a public role, such as an exhibition space, cafeteria, café, and library, are located. In the proposal 1, the concept of 1st floor is communication based clear and open space. The main concept of 2nd floor is a space of combination and communication mixed with nature. The suggested concept of 3rd and 4th floor is an office space that communicates with the citizens which means integrated positioning of the support and management facilities. In the proposal 2, the concept of 1st floor is concentration of the civil complains and related offices in the lower levels which allows easy external access. The main concept of 2nd floor is zoning plan regarding the work and command system. The concept of 3rd floor is multi-function work support space plan which means an installment of an integrated zone for storage of mail and so on. From the proposal 3, the concept of first floor is the integrated positioning public service facilities which link the service space in the form of Bomnae Road. The main concept of 2nd floor is an open main office considering the convenience of the citizens. The concept of the third floor is the independence and symbolism of the council. In the proposal 4, the concept of 1at floor is the convenient entrance planning through the surrounding roads which separates the access routes. The second is a large space plan for citizens which divide the service and entrance routes. The main concept of the second floor is an open space plan that is open to the public. The concept of the third floor is a nature-friendly rooftop deck which links to the staff cafeteria.

	Proposal 1	Proposal 2	Proposal 3	Proposal 4
1st Floor plan				

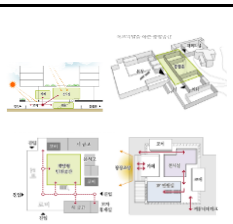
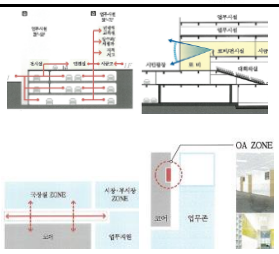
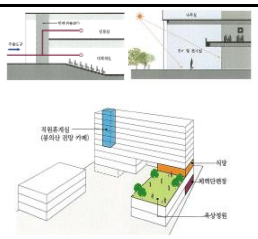
2nd Floor plan				
3rd Floor Plan				
Concept				
	Pleasant and open lobby, Hall-connecting programs, Open public facilities, Community deck exhibit space with no wall	Concentrated layout of civil facilities, Open-lobby planning, Zoning regarding work and command system, Multi-function work support space	Integrated positioning and easy accessibility, Pleasant courtyard	Enhanced connection with the levels, Open and pleasant lobby, Nature-friendly rooftop deck

Table 2. Planning characteristics of common space

4.3. Sectional concept with the context

The sectional concept related with context and environment is a section plan that actively uses the terrain. It can be specified in the following keywords. The restoring of the terrain, the stereoscopic approach, the influx of wind tunnels and the diverse communication spaces. In the proposal 1, the sectional concept related with context and environment is a section that positions masses facing the city and nature allowing visual openness and rewrites the relationship with the context. It can be specified in the following keywords. civil offices concentrated in the lower floors and the open lobby plan that connects the public plaza, the lobby to the main meeting room and the exhibition room. From the proposal 2, The sectional concept related with context and environment is an environment friendly section plan that complies with the attitude and holds various levels and organic locations that take after nature. It can be specified in the following keywords. The positioning of the masses in consideration to the original level of the site, and the environment friendly composition which is the eco terrace and atrium. And in the proposal 3, the sectional concept related with context and environment is a section plan that takes into consideration the level of the terrain and diverse entry levels of the facilities. To be more specific, the level planning aims to links with the urban context which means the level planning does not harm the connectivity of the urban flow. The sectional concept of proposal 4 is as follows. First one is various entrance way considering of different terrain levels and second ones proper floor height related with the characteristics according to each facility.

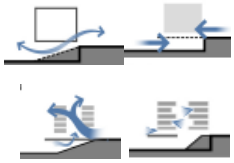
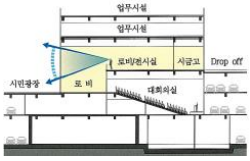
	Proposal 1	Proposal 2	Proposal 3	Proposal 4
Section				
Concept				

Table 3. Sectional characteristics

5. Conclusions

The results of the comparative analysis based on the urban context, common space and sectional approaches are as follows. Firstly, in terms of the passive circulation, proposal 1 introduces a wind passage through an open structure linking outdoor deck and café to the courtyard. Proposal 2 achieves active air circulation through a box-shaped, empty cross-sectional configuration between the wide-open plaza and the buildings. In Proposal 3, light and openness are maximized through a layout encircling an atrium, a stepped terrain, and a courtyard. In Proposal 4, a wind flow that enables natural circulation was induced through a wide-open front yard and courtyard. Secondly, from the perspective of amenity, proposal 1 shows the common spaces that appear both inside and outside as diverse communication places. In proposal 2, a regeneration of memory is proposed via a linkage with the conservation of cultural properties through the common spaces located outside the buildings. Proposal 3 introduces the hosting of annual events is advocated through a specialized plaza, and in proposal 4, cultural events are held in a spacious plaza.

Thirdly, from the perspective of mobility as physical and visual approach, proposal 1 employs a three-dimensional approach, whereas proposal 2 uses a more general method allowing easy access from the outside with civil facilities concentrated on the lower floor. In proposal 3, the facade that faces the outside is maximized through an open yard, and an easy access is allowed, while proposal 4 is special in that it separates different users' circulation and allows access from various directions. Finally, in terms of flexibility regarding the utilization of program and the flexible use for activities, proposal 1 presents a layout considering extension and fluidity, while proposal 2 presents a phased extension strategy for the preparation of unification. Proposal 3 is a comparatively more creative plan and attempts to allow visual extension and flexibility through a fluid elevation created by a variety of vegetation and the movements of the public. Proposal 4 is confined to a comparatively smaller area and attempts to increase the utility of the spaces through an open spatial configuration.

In conclusion, it is established that the detailed planning of the "common space" becomes a more important planning issue for the enhancement of public utilization as compared to the detailed planning of the private space separated from the architectural direction suggested in the main idea of each proposal. That is to say, the way in which common space can enhance urban amenity and effectively manifest the mobility of urban residents, as well as the

flexibility to cope with future expansion and exchange. In addition, according to environmental and technological terms, the most important aspect is passive circulation, which must be considered as a significant planning gesture, which is able to coordinate the various planning elements in order to achieve successful environmental sustainability.

Acknowledgements

This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Science, ICT and future Planning (No. 201617221367)

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