

A Study on the Activation of Built-Up Area in Seongnam-si Through Public Contribution

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Abstract: Unlike the era of development and growth, most of built-up areas are in imminent need to provide public spaces for citizens through the places available to the public in order to improve the quality of daily life. However, since, urbanization has been completed, it is difficult to secure public space easily due to the problem of infringement of private land and equity for citizens. In order to achieve this goal, there has been provided legal systems that can secure public contribution such as land donation, restitution of development gains, gratuitous contribution, prior negotiation system and so on. In the 403 cases of land donation made in Seoul, roads, parks and green spaces total ratio were 86.4% and only 10.8% was applied to other facilities for the internal users. In the case of the restitution of development gain, the accidental profits have been generated as the development proceeds. However, it is highly probable that the contribution areas will not be entirely provided because these can also be provided outside of the area under the judgment of the administrative department. In addition in the case of public voids, it is not literal public contributions because they do not actually transfer land ownership along with the incentive provisions in the district unit plan. However, it is a voluntary public contribution because it is recommended to provide a design tailored to urban flows in areas such as special design. Unlike other systems, the prior negotiation system has been applied to increase the efficiency of recycling and utilization by disposing of infrastructure with the goal of fostering strategic regional base of large-scale site with high potential land use and revitalizing urban development. Among above 73 developed examples, public contribution of more than 5,000 m² was 20% for land donation (district unit plan), 23% for land donation (urban environment maintenance project), 17.2% for public voids. As for ratio, the prior negotiation system provides the highest public contribution rate. Therefore, it is necessary to secure the utilization and diversity of space more easily and to revitalize the area by recycling the infrastructure in which the hollowing phenomenon occurs. Therefore, public contribution should be secured by using the prior negotiation system.

Key words: Public space, public contribution, built-up area, urban regeneration, phenomenon occurs, ratio

INTRODUCTION

Setting and purpose: Although, in the past, it had not emerged as a citizen of the nation's prosperity and well-being but now a days it has become a time for pursuing public values beyond the personal interests of individuals. However, the city has failed to cater to the quantitative provision of housing and commercial facilities in the urbanization process, so far that it does not provide sufficient room for public spaces such as public spaces that affect the quality of life.

In particular, due to the completion of urbanization and the absence of the available public space that can accommodate various activities, the existing urban areas have been operated as a limiting factor in providing efficient and planned space without affecting the damage

or profit of the private property. The space that was unable to serve with various living necessities was lost as a place of life and people were forced to move to a better place.

Therefore, public contribution for promotion of public availability and urban brand values should be provided through the provision of public contribution systems that systematically increase public spaces and enhance the quality of life of modern citizens.

The purpose of this study is to investigate the flow and direction of legal system to secure urban or architectural publicity and based on the available public site is to suggest that the system be developed for large-scale sites or strategic areas that can be used to promote the potential for large-scale land use and devise measures to guide them accordingly.

Literature review

Theoretical approach

Public space: Public space is generally a space that is contributed and open to the public and provides public benefits. And it is a space that stimulates various activities and communication and has a concept which includes public and private spaces that are created and opened for citizens. In urban planning, basic elements of public interest are explained in terms of health, safety, convenience, efficiency, resource saving, environmental quality, social equity, choice opportunity and comfort. And the public spaces offered in our society such as green, parks and plaza are freely available as institutions such as schools, hospitals and libraries.

Urbanization and built-up area: In the principles of urban planning (third edition), urbanization is not progressing infinitely but progressively changing according to stages of time and the form of development is also different. Urbanization is subdivided into urbanization, suburbanization, anti-urbanization and re-urbanization.

From the above viewpoint, the existing urban areas in Korea are mostly in the re-urbanization phase. And its main directions of urbanization are improving the quality of the redevelopment projects, transportation conditions and residential environment and are finding ways to revitalize the functions of urban centers through urban development or urban regeneration projects. Therefore, these urban regeneration measures attract people outside the city back to the city (Jung *et al.*, 2016; Kim *et al.*, 2016; Kyoung-Chul *et al.*, 2006; Tae-Hoon, 2005).

However, most of the existing urban areas are currently in the process of improving the residential environment. But there is a limit to improvement of urban functions only through the improvement of housing in the situation where the commercial area is not alive.

Therefore, economic-based regeneration that can revitalize local commercial areas should be concurrently performed and it is time to increase the utilization of infrastructure space that is manifested as hollowing phenomenon.

MATERIALS AND METHODS

Public contribution: The term “public contribution” has no defined yet but it is generally used as a common name for securing the public in the process of urban development and as a means to secure the public available space, it means “To provide the land owned by the project owner for the benefit of the state or community” and may be defined as the transfer of ownership to the public. However, it is necessary to define a larger category without limiting the extent to which public contribution can be involved in the concept of goods, not limited to land.

Re-view on pre-researches: Including a study on the effect of public contribution as a means of restitution of development gains-focused on the special planning districts (Ki-Hyun Identified and Chang-Heum, 2011), effectiveness of contributed acceptance for improving the quality of public contribution (Cho and Kang, 2014), problems and potentials of the pre-negotiation process for the public contribution of large-scale private development (Ahn, 2012). The definition and legal issues of the public contributions as exactions in return for rezoning in seoul (Kim *et al.*, 2016) in these previous researches, it has been proceeded to quantify and calculate the profit structure generated from development and to examine the legal review and systematic limitations. However, the research to propose an appropriate level of space using the public contribution has been insufficient.

Method and scope: The study examines the systematic scope and changes for securing publicity through literature study and legal case analysis and finds a system that can be applied to the existing city area. To accomplish this, follow the following research methods: first, the periodical flow of the domestic legal system related to public contribution is summarized through the literature survey. Second, the applied institutional cases are analyzed and their linkages are also derived. Third, we propose a system which can be applied in Seongnam city through research results.

RESULTS AND DISCUSSION

Legal system

Present condition: With the amendment of the Urban Planning Act of 1971, the policy of restraining the growth of the metropolitan area at the level of the territorial plan was made. After the first and second plan for the balanced development of the land. The 4th was developed in the direction of the area and the environment (Anonymous, 2013).

From the beginning of the 1990s as the city became more interested in the characteristics of cities and the use of SOC in tandem with the third plan, the publicity of the city began to emerge and has to institutional changes and improvements.

Especially, in the late 1990s, due to the economic crisis, the development profit system did not impose a development fee and tried to reduce the burden on the construction industry (Table 1).

Five systems such as redemption, redemption gain, release, advance bargaining system and free disclosure can be used as a means of securing public spaces and spaces in the land or the city which can be used s a means of securing space or space (Table 2).

Table 1: Present legal condition for securing publicity with starting year

	Content	1st national Land planning (1972~1981)	2nd national Land planning (1982~1991)		3rd national Land planning (1992~1999)		Long-term planning		4th national Land modification planning (2006~2020)	
Active										
Passive		1970	1980	1990	1995	2000	2005	2010	2016~	
Land Donation	change the form and quality(1977)									
	School transfer site (1982)									
	Semi-industrial district (1996)									
	Standard of district unit plan(2010)									
Restitution of Development Gains Act	Contribution to exploitation (1990)									
	Standard development cost system (2011)									
Public voids	Public voids system (1991)									
	Voids in the site (1999)									
Prior negotiation system	Prior negotiation system(2009)									
	deletion of facility guideline for public contribution(2016)									

Table 2: Change of land donation system

Division/Contributed acceptance	Restitution of Development Gains Act	Public voids	Prior negotiation system	Gratuitous contribution
Legislation				
State Property Act (State-Owned Property Law Article 2 No. 2, Article 13, Property and Commodity Management Act Article 2 No. 3, Article 7, 8)	Restitution of Development Gains Act	Building Act (Article 42, 43)	National Land Planning and Utilization Act article 51 (1) Metropolitan Ordinance Article 19	National Land Planning and Utilization Act article 65, Act on the Maintenance and Improvement of Urban Areas and Dwelling Conditions for Residents Article 65
Target				
Real estate, various right	Public investment business, development gains	Estate	Estate, space, development gain lot	Facilities, land
Related business				
Urban development, refurbishment for city planning and housing condition, housing, architecture	Urban development, housing lot development, housing, architecture	Architecture	Refurbishment for city planning and housing condition, city planning	Refurbishment for city planning facilities refurbishment, urban development, housing construction, housing lot development private lead refurbishment public lead refurbishment

Contributed acceptance: In 1977, 'the manual for allowance of change of use area etc. stipulated that 20% or more of the site area should be donated to the society by returning the accidental benefits of the abolition of

public facilities to society. And after that, through business process instructions such as 1982 guideline for school removal land, 1996 guideline for multi housing in semi-industrial area, 2003 detailed guideline for control

low-rise independent housing area, 2007 guideline for control concerning apartment house development, they encouraged development by transferring ownership of the donation space to the country and providing incentives. And it is a process that today's donation system has been reached.

In the flow of the above system, until 2000, large scale complex or land standards were proposed but after that, the range of single-family houses and public housing in apartment complexes has expanded and diversified.

However, as a result of reviewing 403 donation cases of Seoul city 2014, a ratio of roads/parks/green spaces was 86.4% and public office/social welfare facilities/physical education was 10.8%.

Although, donation of centered on a specific facility has provided the infrastructure necessary for the past development period. There is a limit to the fact that residents of the project site have created parks dedicated to them.

In the development process, it is often the case to provide the space by simple numerical values or to provide convenience facilities for internal users only without considering the local residents and the surrounding situation. Recently, in order to improve this, consultation between the public, the public and the residents is taking place through the proposal of the residents.

Restitution of development gains: In terms of the changes in the system, the development profit return system seems to have been changed in accordance with the domestic economic situation. In 1990, the system imposed a 50% burden and the system was introduced in order to prevent speculation that the development profit was privatized due to the rise in land prices but in 1998, the development

project was depressed due to the economic crisis and the development fee was temporarily exempted to activate the construction industry.

In order to recover the accidental profits generated by the progress of the development, the development profit return method is applied. This reimbursement is not used for the area but can be used flexibly by the local government. Therefore, It is unlikely to see this direct benefit.

Therefore, it is necessary to improve the construction industry in the region but it is not appropriate to use it as a public contribution system in the old city area that needs publicity.

However, if the system is supplemented, so that, the amount can be directly applied to the area. It can have a great impact on securing publicity in the old city area (Table 3).

Public voids: In the case of public voids system, the provisions of the act were enacted in 1991 with the amendment of the Constitution Act in conjunction with the provisions of the relevant law.

The enforcement decree of 1992 created a standard of not <5,000 m² in total area, <10% of land area, coverage ratio, floor space ratio of <1.2 times and <1.2 times <1/5 of known height in the site. And from 1991-1999, we can say about maturity after the introduction of 99 years (Table 4).

At the beginning of the introduction, there was a limit to the public void area and a large number of installation sites were secured, making it impossible to secure the cityscape. So, in order to improve this, we have promoted the smooth application by restricting installation area and area after 1999 (Table 5 and 6).

Table 3: Change of land donation system

Years	Changes in institution	Contents
1977	Official guideline to permit land use change etc	More than 20% change in site characteristics land donation
1982	Guideline for school removal land	More than 20% of the site area land donation
1996	Guideline for multi housing in semi-industrial area	More than 20% of the park site
2001	Guideline for district unit plan in factory removal area of	More than 20% public facilities land donation
		semi-industrial area
2003	Detailed guideline for control low-rise, independent housing area	Step 1 up use area more than 15%
2004	Standard for district unit planning of apartment in low rise residential area like single house	Step 1 up use area 10%(tenement house more than 5%)
2004	Public contribution for abolition of city planning facility (school)	More than 15% public contribution
2007	Guideline for control concerning apartment house development	Step 1 up use area more than 15%
2009	Overall development plan in semi-industrial area	Infra-structure net imposition 10% more land donation-in case of local centered 230%~380% over area increase ratio 1/2-land donation as rental industry land
2009	Rearrangement plan for publicity of Han River	Following use area step 1 up 20~48% public contribution+net imposition 25%
2010	Standard for district unit plan	Following use area step 1 up 10%
2011	Guideline for prior-negotiation of alteration in city planning	Following use area step 1 up 20~48% land donation deletion (combined case of city planning facility (public contribution 20%(public benefit+))







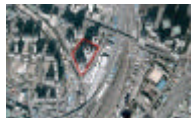





Table 4: Change in public voids system

Years	Contents
1991	Provision of public open space through amendment of building code
1992	Gross floor total area over 50002, not <10% of the Earth's surface area
1995	Delete building coverage rate criteria
1999	Deletion of voids in the site criteria

Table 5: Prior negotiation system

years	Division	Changed contents	Public contribution rate
2009~2016	Change of use area	Semi-residential area>general commercial area	30% or so
		Third-general residential area>general commercial area	40% or so
		Third-general residential area>semi-residential area	20% or so
		Second-general residential area>general commercial area (first-general residential area)	45% or so (48% or so)
		Second-general residential area>semi-residential area (first-general residential area)	30% or so (37% or so)
	Division The abolition of urban planning facilities (mixed-use facilities)	Changed contents	Public contribution rate
		General residential area>general commercial area	35% or so
		General residential area>semi-residential area	25% or so
		No change in zoning	20% or so

Table 6: Case Studies on the application of public contribution

System	Site			System	Site		
Contributed acceptance Urban environment maintenance project		Area	12,029 m ²	Special design		Area	15,639 m ²
		Applicable area	1,996.4 m ²			Applicable area	2,133 m ²
		Public contribute rate	16.6 (%)			Public contribute rate	13.6 (%)
		Year	2006			Year	2002
		Area	17,686 m ²			Area	5,341 m ²
		Applicable area	2,742 m ²			Applicable area	673.5 m ²
		Public contribute rate	15.5 (%)			Public contribute rate	12.6 (%)
		Year	2007			Year	2005
		Area	6,502.8 m ²			Area	6,124 m ²
		Applicable area	1502.5 m ²			Applicable area	974.1 m ²
		Public contribute rate	23.1 (%)			Public contribute rate	15.9 (%)
Contributed acceptance district unit plan		Year	2007			Year	2010
Contributed acceptance district unit plan		Area	13,368 m ²	Advance negotiation system		Area	15,900 m ²
		Applicable area	4,640.5 m ²			Applicable area	(49.6 billion)
		Public contribute rate	34.7 (%)			Public contribute rate	43 (%)
		Year	2003			Year	2012
		Area	19,910 m ²			Area	18,953.7 m ²
		Applicable area	3,075 m ²			Applicable area	3,791 (6,003)m ²
		Public contribute rate	15.4 (%)			Public contribute rate	35 (%)
		Year	2005			Year	2013
		Area	135,037 m ²			Area	20,844 m ²
		Applicable area	23,472 m ²			Applicable area	5,700 m ²
		Public contribute rate	17.4 (%)			Public contribute rate	31.3 (%)
Year		2007	Year			2013	

Prior negotiation system: There are two basic objectives of the pre-negotiation system. First, it improves urban

planning and operation system such as change of use area and city planning facility to foster strategic regional

base of large land with potential and revitalize urban development. Second, it was established to promote the rational allocation of accidental profit due to the change of urban planning use and the balanced development of the city.

The legal limitations of the pre-negotiation system between Seoul and Bucheon city are as follows. However, in Seoul in 2016, the limitation of development was limited to the furnished facilities which is one of the most important advantages of the pre-negotiation system. The question of taking the operating profits generated by private facilities, rather than transferring ownership to the public should be reconsidered.

Gratuitous contribution: Unlike other systems, there is no independent legal system or enforcement ordinance and it is implemented in the law of the national government. It is a primitive acquisition that provides free of charge infrastructure to the administrative office. It is not given any incentive and provide free of charge to the project owner. If the project owner is a private company, it is classified as free transfer. Or if they are public, they are classified as free. Normally, since, incentive conditions are not involved, most of the business is conducted in public or maintenance projects rather than in private companies. There are two basic objectives of the pre-negotiation system. First, it improves urban planning and operation system such as change of use area and city planning facility to foster strategic regional base of large land with potential and revitalize urban development. Second, it was established to promote the rational allocation of accidental profit due to the change of urban planning use and the balanced development of the city.

Built-up area

Current condition: At present, most of the existing urban areas are limited by urbanization and the government or private sector is the main state to carry out the regeneration project. To overcome these limitations, it is necessary to secure publicly available site. This is because space can be provided or suggested variably according to necessity.

In addition, most of the regeneration projects in the old city have focused on resettlement of the local residents through residential vitalization but they have to find the problems in the declining regions and participate in community and sustainable development.

In particular in the case of Seongnam city, since, the mid-1990s, there has been a decline in fertility rates and the development of new towns in the surrounding area has continued, resulting in population drainage and urbanization in urban areas. Educational establishments

that were built with population growth are also moving or integrating with the problem of reducing the number of students. Although, the change of the transfer site or infrastructure caused by this phenomenon is an opportunity to secure the publicly available site, there are no systems and procedures for this.

Re-generation: In the case of economy-based regeneration, there is a need to activate urban commercial functions by promoting and expanding the strategic development of undeveloped or underdeveloped sites with high potential by identifying development needs such as existing commercial areas or transfer sites.

Currently, the development of the station area in Korea depends on the district unit plan or the enterprise for re-improvement. But the resulting donation receipts and development profits are often ineffective for local residents.

Therefore, the public contribution method which is a system for securing resources to return to residents and communities through the development of the base area should be introduced in various directions.




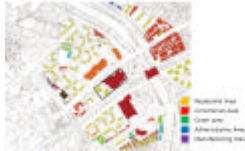

Most of the existing urban areas that are in the stage of social change and re-urbanization as a citizen's need various spaces at present and the way to solve them is to provide a public space. As a legal system to solve this problem, various institutional devices such as restitution of development gains, public voids and pre-negotiation system were set up starting from land donation in 1977 and extended from the securing of the initial public space to the concept of public contribution. And this has become a way for local people to secure publicity in various ways.

The transfer and change of the infrastructure in Seongnam city old part can secure the public available space through the public contribution and the way of revitalizing the local commercial area through utilization of the land with high land use value.

Case study: The public contribution average for each of the 73 cases that were developed over 5,000 m² was 20% for donation (district unit plan), 23% for donation (urban environment maintenance project), 17.2% for public voids and 35.5% for prior-negotiation, providing the largest public contribution rate.

The average public contribution rate, since, the 4th national land plan in 2006 was 23.6% for donation (urban environment maintenance) and 18.2% for public announcement. And prior to 2005, the average contribution (urban environment improvement) average was 16.1% and the public announcement was 16.6%, showing a tendency to have more than the previous

Table 7: Case analysis

System	Site	
Land donation	 <p>Layout plan</p>  <p>Zoning classification</p>	 <p>Bird's eye view</p>  <p>Status of nearby buildings used</p>  <p>17.4%</p> <p>Public open space 1,802 m² ratio</p> <p>Social welfare facilities 1,115 m²</p> <p>Road 5,210 m</p> <p>Yongsan-gu, Hanam-dong 60 area (2007)</p>

average ratio. But in donations (district unit plans), the figure dropped to 21% before 2005 and to 18.6% thereafter. In the case of public voids, 26 cases, 74% of 35 cases were developed for mixed use, 17 of which were confirmed before 2006.

The pre-negotiation system showed an average of 35.5% and the public contribution area was much higher than other schemes. Various methods such as refunds, public facilities, cultural and welfare facilities were provided through proposals of residents (Table 7).

The site of unit 60 (known as Dankook Univ. site before) was originally planned to provide parks for the initial city space facilities and some road plans were included. But through the proposal of the residents, the park area increase, the public announcement and social welfare facilities were secured and confirmed in 2010.

Originally, parks and roads were 88% of the public contribution rate and public land and social welfare facilities were proposed for linking with local residents and helping welfare activities in the surrounding area. But now a days, it is operated differently from the initial purpose such as being used as entrance to the complex.

The public contribution ratio applied to Shindorim-dong 360-51 of the special design zone is 10% higher than other special design zones. But there is no restriction on the proposal of the residents or the provision of the space, it has not reached the category connecting the surrounding plazas. So, park and roads offered only the area provided.

In the case of Goduk-dong, Gangdong-gu, the pre-negotiation system was developed as a complex for residential, business, commercial functions for local residents and culture, sports and jobs for local residents after Seoul Bus Garage's closure. Unlike the system, it does not concentrate on the parks and roads but introduces the facilities which came out through the proposal of the residents and the establishment of business and culture sports facilities occupies 93% of the public space. In addition in the case of Dongkyo-dong in Mapo-gu, public facilities such as a design support center and a child-care center for local minor businessmen was established for the protection of the surrounding commercial areas by a mixed station development plan. And it was made available for free during the operation (Table 8 and 9).

Table 8: Special design case analysis




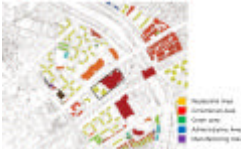

System	Site				
Special design					
	Layout plan	Bird's eye view			
					
	Zoning classification	Status of nearby buildings used			
					
	Facility	Public park	3,318 m ²	Public contribution ratio	26.9%
		Road	6,162 m ²		
	Guro-gu, Sinrim-dong 360-51 (2013)				

Table 9: Advance negotiation system case analysis








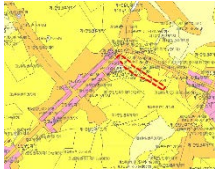
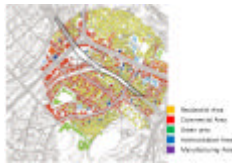
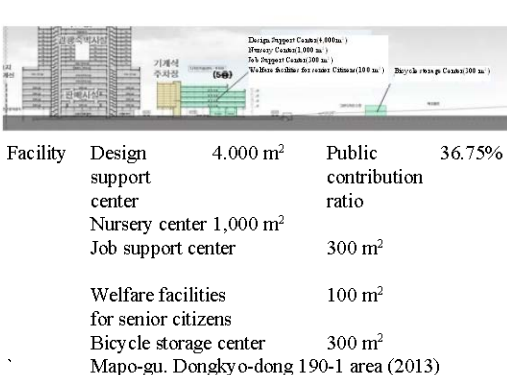
System	Site				
Advance negotiation system					
	Layout plan	Bird's eye view			
					
	Zoning classification	Status of nearby buildings used			
					
	Facility	Young establishment center	11.400 m ²	Public contribution ratio	43%
		Cultural and physical	6.370 m ²		

Table 9: Continue

System	Site
	<div>Facilities</div> <div>Road 1,265.9 m²</div> <div>Kangdong-gu, Goduk-dong 210-1 (2012)</div> <div>  <div>Layout plan</div>  <div>Bird's eye view</div>  <div>Zoning classification</div>  <div>Status of nearby buildings used</div> </div> <div>  </div>

CONCLUSION

Land donation, restitution of development gains, public voids, gratuitous contribution are the system that can provide current space or put money into the necessary area through fund. But these are biased towards parks and roads or are a passive form to secure publicly available sites as a means of revitalizing the local economy or just a proposal of a new space that is not a solution due to the loss of function by redeveloping the existing residential complex or providing the space by solving the legal limit within the commercial complex.

However, by recycling the declining space due to the loss of infrastructure such as the pre-negotiation system, we searched for a point in the center of the city and proposed large spaces with utility for public interest along with proposals of resident by securing the public contribution rate, it is possible to provide a variety of spaces suitable for local characteristics, not simply providing a single space.

In addition by having the public resources, the space can be changed more flexibly for the public interest

according to the local situation and the change rather than the transformation for the benefit of the individual such as the private land.

Local communities corresponding to the old urban areas have to make space utilization and diversity easier and in terms of recycling of infrastructures caused by hollowing phenomena also have to consider the proposal of the residents through the public contribution system.

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