

Urban Residential Regeneration Based on Analysis on Characteristics of Single-detached Houses

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ABSTRACT: This thesis is focused on strengthening the housing function through inflowing the population at the viewpoint of residential regeneration in city center. The research method is as follows. First, the time series analysis on the population change in city center is carried out. Second, the alternative of physical urban residential regeneration is indicated. This means that in the aspect of assuring the residential sites it will be investigated, whether proper spaces for developing the residential sites exist or not. In this step, the whole districts of UHIP in Jeonju City shall be grasped and analyzed according to the characteristics of location, scale and facility. Third, the number of households living at outskirts of the city or the unavailable development sites shall be grasped. This number comes under the scale of households, which can be come into the areas of urban residential regeneration. Conclusively, this process makes it possible to calculate the entire scale of population, which can be formed in the city center anew.

Keywords: residential regeneration, single-detached house, unavailable development site, deurbanization, UHIP (urban & housing improvement plan)

1. INTRODUCTION

1.1 Research Background

In 1960, apartment houses began to be widely constructed in Korea. Since then, more than 30 years have passed and nearly 70% of entire residence consists of apartment houses. Until early 1970's, apartment houses were usually limited to 5 stories or lower. However, 15 story apartment buildings became more common in mid 1970's [1] and as we enter 21st century, an era of extremely tall apartment

houses has arrived. Finally new residential areas have been constructed in large scale in suburban areas. This has also led to deurbanization and depopulation of inner city (e.g. Fig.1).

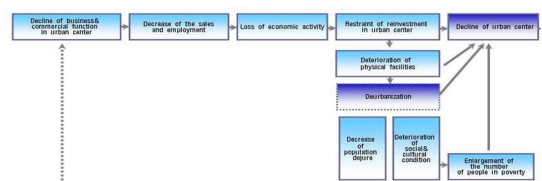


Figure 1: Process of Deurbanization.

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Reduction of de jure population has also affected various utility facilities as like as decreasing number of elementary and junior high school student population, falling business and commercial function and demise of conventional market in the inner city. To overcome these problems, various projects for urban revitalization are being presented and developed. However, reduction of de jure population and the floating population has also shown to reduce the effectiveness of the project. Ultimately, reduction of ordinal pedestrian users, which is caused by the sprawl of residential areas and public institution transfer, has become a factor in diminishing the accessibility of inner city commerce.

1.2 Research Purpose

To solve the problem from the viewpoint of urban residential regeneration, it is important to observe the existing developing areas and their scale for secure the proper type of residential areas. And finding the way to attract more population in outskirts or the districts unavailable for development is much needed.

In this study, the whole districts of UHIP in Jeonju city shall be analyzed according to characteristics of location, scale and facility. This process makes it possible to calculate the entire scale of population, which can be formed in city center anew.

1.3 Research Scope and Methodology

The content scope of this study is securing residence in inner city and promoting the inflowing de jure population.

And the process of research is described as follows: First, from the viewpoint of urban planning, analyze the geographic structure of Jeonju city on the digital map. Second, understand the distribution of the residential area where the re-improvement is needed. This plan is to create the residential areas as unit in inner city. At inner city, various urban planning institutions are already located. So, using these can avoid the additional expenditure of the budget to build new urban planning institutions. Therefore, it is necessary to grasp where, how big and what kind of urban planning institution

is closely related to residence. For instant, grasp ordinal pedestrian life zone such as conventional market and elementary, junior high school, and set up the plan to link them with surrounding institution. Third, analyze the characteristics of unavailable development areas by location and land morphology. This can help to calculate the residential scale, which has to inflow from the unavailable development areas.

2. THEORETICAL APPROACH

2.1 Urban Regeneration

Urban regeneration originated from western European countries in 1970's, when they were searching for plans to overcome the struggling condition of the secondary industry and removal to suburban areas. The point of these plans was for establishing the basic institutional infrastructure to recover the function of self-sufficiency, and created the sustainable environment. In 1990's, these problems have approached a point beyond the physical planning dimension and have been magnified to socio-economic dimension [2]. Therefore, urban regeneration is not just limited to a single scheme, but is linked to multiple schemes with various scale and type.

These situations represent the difficulties that arise when defining urban regeneration into a notion with a fixed form. According to Oh, D. defines urban regeneration as a sustainable city development plan which harmonizes economic growth and environment conservation by controlling the city extension spreading, preventing city atrophy, and reactivating the city area [3].

According to these definitions, urban regeneration is about creating attractive space in the city, and planning the inflowing of de jure population and the floating population and activating commercial rights to make the sustainable changes of the city.

2.2 Urban Residential Regeneration

The basic part of urban regeneration is to secure residential areas in inner city. Of course,

when the specific project is propelled in inner city, certain part of residential area can be secured. But it is not guaranteed that the residence will be placed in right areas where the inner city regeneration is needed. In that point, the inner city residential regeneration is different from the urban regeneration. The first reason is, the urban generation has a meaning of newly recreating the city by strengthening self-sufficiency function of the city and securing inflowing population, but effected space means the whole city. So the scale is much greater than activating the existing function of the inner city. The second reason is because; inducing the new function in the city is not a device to activate the existing business and commerce function directly, but can expect the indirect spreading effect by activating newly made function. The third reason is that even though inflowing population is secured by inducing new business and commerce function at the inner city, when de jure population isn't secured, deurbanization problem cannot be solved. Therefore, the basic plan to materialize the sufficient conditions of inner city residential regeneration is presenting the plan to secure de jure population. Here, coefficient of utilization of the existing basic institutional infrastructure can be strengthened, and this can be defined as the essential approaching way to inner city residential regeneration.

2.3 Single-detached House

Single-detached house means constructed or reconstructed house for one family, but according to statistic classification in Korea, the type that is totalled to single-detached, includes multi-household house. In these kinds of multi-household houses, several families can live inside of the one building. Beside the type of houses mentioned above, there are apartment houses. This includes not only apartment houses, but also row houses and multiplex houses. Each family can use the building site, wall, hall, stairs, and other facilities together, and can have private residence life inside the building.

In this study, the definition of single-detached house is not just limited to single-

detached house in a narrow sense, but includes single-detached house, multi-household house, and multiplex house. It's because multiplex-house is also distributed at the general residential area I, where only single-detached house is allowed. And by this kind of multiplex-house the density of resident is getting higher.

3. URBAN SPRAWL OF JEONJU CITY

3.1 Urban Development

Jeonju city is mostly located on a flat land surface. Since 1960's, the urban sprawl was progressed rapidly on the basis of various urban development projects such as land readjustment project, land development project and residential area development project (e.g. Fig. 2). The total size of the areas created by development projects is 15.81 km², and it's 43.1% of the Jeonju city administration area (42 km²) excluding the green area (206.28 km²).

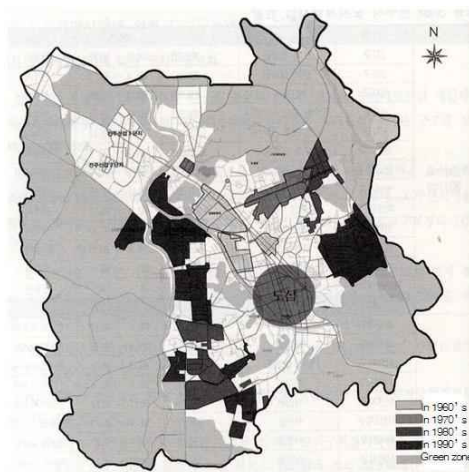


Figure 2: Development Projects of Jeonju City by Time-Period.

3.2 Depopulation in City Center

In 2004, the number of household in Jeonju city was 181,857 [4]. The maximal number of household in city center was 42,782 in 1980's and in 2005 its number is decreased in 32,477 [5].

From 1980 to 1984 de jure population near the inner city started to decrease, and from 1985 to 1989, decreasing area of the de jure

population expanded to south eastern part of the inner city. From 1990 to 1994, the area which de jure population is decreasing expanded to northwest of the inner city. The kind of urban expansion can be summarized as follows; First one is the atrophy of the inner city. The residence in inner city continues deterioration and the living environment is getting worse, but new residence development at suburban area activates, so de jure population continues to transfer. Second, the deurbanization by progressing big scale new development projects is deepening. Besides, main public facilities located at inner city, such as the provincial office and national police agency relocated their offices to administration town of western new urban district.

3.3 Residential Characteristics of UHIP

According to the UHIP in 2006, there are 61 districts that were selected for prearranged improvement. By analyzing the percentage of each classified project type, house-redevelopment project has the highest percentage at 56.3%, residential environment improvement project at 30.2%, house-reconstruction project at 7.6% and reserved districts at 5.8%.

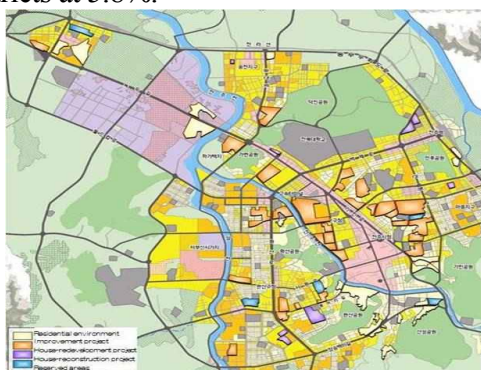


Figure 3: Urban Improvement Sites by Project Types of Jeonju City.

Jeonju city plans to complete the improvement projects by 2010. In this case, the total residence supplied in the whole Jeonju city will increase about 220% from 24,336 households to 53,452 households.

However, the plan simply inducing increase of the number of household cannot say a reasonable urban and residential improvement.

This kind of increase induce the injudicious expanding of residence at either inner city or suburban area, and can cause unbalanced supply and request problem by not considering the proper demand. Consequently, it is necessary to check the scale and location of the areas where maintenance is needed in order to do the inner city residence regeneration. And judgment about the unavailable development areas should be done as well. But most of all, with the residence located in areas that are unable to be developed, relocation to alternate locations should be presented. In this process, selection for the proper development location can be done.

4. ALTERNATIVE OF URBAN RESIDENTIAL REGENERATION

4.1 Analysis on Accessibility to City Planning Facilities

In order to avoid the urban sprawl and find proper scale and location of urban residential regeneration, it is necessary to access the residential areas to basic institutional infrastructure (contiguity of principal roads, ration of public facilities in living zone, contiguity of schools etc). Among these factors, the contiguity of schools and conventional markets comes under Jeonju city.

In relation to the accessibility to elementary and junior high schools, schools must be generally located within 10 minutes of walking distance for students. It means that the residence can be established within the radius of 800m (e.g. Fig. 4).

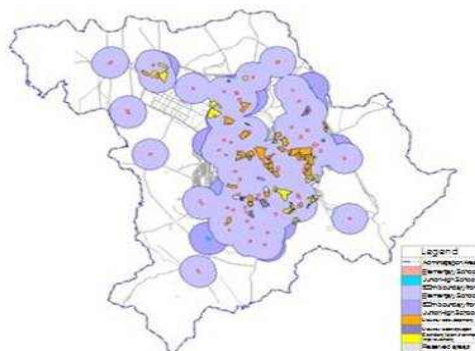


Figure 4: Accessibility of Development Sites to Elementary and Junior High Schools.

In relation to the accessibility to urban commercial facilities by pedestrians, conventional markets are located in city center. Their effect zone can be 800m from the present living areas such as schools (e.g. Fig. 5).

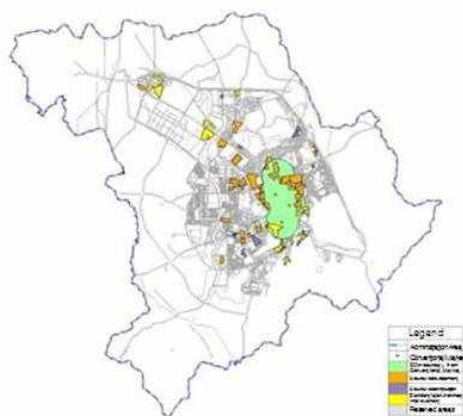


Figure 5: Accessibility of Development Sites to Conventional Markets.

As a result of overlapping these maps, the sites where the two factors coincide in and urban residence regeneration is in advance needed can be selected. And these sites are identified with the accessibility zone to conventional markets. In these sites, the prearranged number of household is 13,835.

But in these sites there exist unavailable sites for residential development. Therefore, it is necessary to except the sites. Then the supply of new houses in these sites can be finally calculated at 11,026 houses.

4.2 Analysis on sites unavailable for development

Unavailable sites for development are related to the residential areas, which are located either at outskirts, where the accessibility is inferior, or at hilly sites, where the geographical given conditions (slope, flat, etc.) are improper (e.g. Fig. 6). The analysis on these sites is important at two aspects. The one is for identification of proper development location and scale and the other, for verification of potential inflowing population from unavailable development sites.

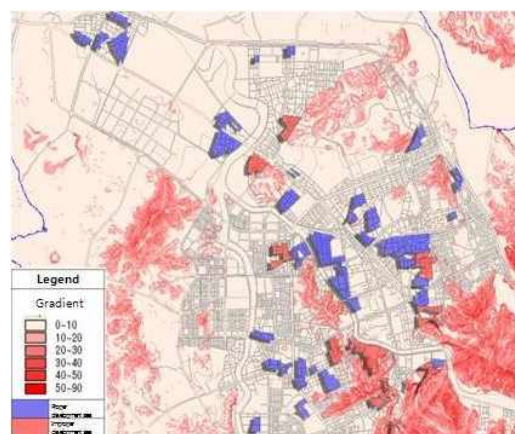


Figure 6: Sites unavailable for development according to the Gradient Analysis.

Now, based on this map, it is important to verify and calculate the supply and demand of residence. The key point is to verify whether or not the volume of residence supply in inner city is enough to satisfy the increasing and inflowing residence demand from outskirts and unavailable development sites.

The number is finally presumed to 6,237 households. This is 56.6% of the new supply of houses in 2010, and it shows the real demand can be fulfilled.

The rest of housing supply can be regarded as oversupply. But in reality, it can be supplied either for potential classes of new housing demand or for the ones, who seek the temporary houses in the period of reconstruction or re-development. Accordingly, it is reasonable to plan some of surplus for supplying new houses.

5. CONCLUSION

This study set on its viewpoint to urban residence regeneration, is finally focused on verifying the physical development scale. It is verified that enough size of residence to fulfill the newly come out residence demand can be secure at inner city. Despite, this study might be criticized by basic matter. First, the newly supplied residence land at inner city cost relatively a lot more than unavailable development sites or outskirts. So when residents lived in outskirts or unavailable

development sites moves to here, even though they sell their existing house, they still might have to pay excessive amount of extra cost. This is applied to limit cause of purchasing residence. To solve this problem and promote inflowing population, it is necessary to present various alternative plans. Such as, converting unavailable development sites to other supplies to provide actual reward expense, so the extra cost can be revised. Furthermore, from the social-economic view, plan to support purchasing the residence can be groped. And the analysis of proper size of residence for each generation is needed also. The residence located in outskirts or unavailable development sites is almost made up small size house. Supply the same size of the residence to a generation living in this kind of area, is meaningless. Therefore it is necessary to analyze what the proper size of residence should be.

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REFERENCES

- [1]Je, H. 1989. An Improvement of Legislation and System of High Dense Apartment Houses. Journal of the architectural institute of Korea Planning & Design. Architectural Institute of Korea. Vol 33. No 6: pp24-28. Korea.
- [2]Kim, Y, Baek, K & Oh, D. 2003, A Study on the Characteristics of City Center Regeneration in Sheffield, England. Journal of the architectural institute of Korea Planning & Design. Architectural Institute of Korea. Vol 19. No 9. pp69-78. Korea.
- [3]Kim, Y, Choi, J & Oh, D. 1993. A Study on the Strategies and Elements of Growth Management-typed City Center Regeneration. Journal of the Korea Planners Association. Korea Planners Association. Vol 38. No 3. pp85-97. Korea.
- [4]Jeonju City. 2006. Urban and Housing Improvement Plan 2010. Korea.
- [5]Hwang, J, Park, C, Koo, J, Baek, S & Yoo, S. 2008. Analysis on the Characteristics and Estimation of Low Story & High Dense Single-detached Housing Areas for Urban Housing Regeneration. Journal of the architectural institute of Korea Planning & Design. Architectural Institute of Korea. Vol 24. No 5. pp249-258. Korea.