Abstract: The housing policy for the urban low-income group in Korea has been insufficient to settle practically low-income housing problem and has not been concerned in long-term appreciation. Low-income groups are pressured extreme financial burden. Consequently, therefore they need to be supplied low-priced housing in respect to income level.

Key Words: Manufactured housing, Lego block-type, Plug-in, System, Structure, Mass production, low-priced supply, Transfer

1. Introduction

The housing policy for the urban low-income group in Korea has been insufficient to settled practically low-income housing problem and has not been concerned in long-term appreciation. Population increase and binuclear were provoked by industrialization and urbanization, in result demand of housing was increased. But the housing policy is biased dwelling supply in quantitative, therefore low-income residential environment has not been improved in terms of quality of life. Low-income group especially pressured extreme financial burden. Consequently, therefore they need to supply low-priced housing in respect to income level.

This study is to recognize necessity of low-priced housing and to solve supply problem of low-income group residential by research on the actual condition.

For this study follows are surveyed: Policy and situation about low-income housing. Condition for understanding actuality of low-income housing environment by selected areas (Bongchun-dong, Haebang village, Nangok village).

The purpose of this study to grasp quality of system Housing and to suggest a improvement method that system architecture application system to low-income housing. The Prototype of housing model as System Architecture Design is expectd as a result.

2. The condition and characteristic of low-income housing

Due to low income, frequent moving and increased rental fees, low income people's residential situation became unstable while too compact residential condition with reduced individual residential space and could not secure privacy at times. In addition, owing to poor construction techniques and cheap materials used for residential buildings, outer appearance of it does not look fine and underdeveloped or inferior supplementary facilities become unsanitary. Besides them, unstable residential establishment makes road condition poor, which in turn makes surroundings unhealthy and it difficult to secure necessary service facilities.

The characteristics of inhabitants are conventional, close-minded and conservative. Lack of knowledge gives them less choice for employment; inevitably living by hard work. That means low income makes unstable environment. For characteristics of surroundings neighboring the residential areas, houses to be vulnerable to a fire are compactly gathered while public hygienic facilities and city water/drainage are very poor and risky factors such as terraces, steep slopes and etc are left without any renovation as they are.

As the improvement methods for the low income families, several actions such as expansion of financial aids, reduction of taxation, expanded housing supply, expansion of public houses for a long-term period and foundation of housing fund were presented but they were not helpful significantly to fix them up. First of all, low income people could not accept to makes them unstable. More importantly, inexpensive residential places should be supplied, mass-constructed and secure the mobility for them to get an opportunity to live in anywhere. As an alternative plan, a manufactures housing, Lego block type housing can be proposed. It is considered that the Lego block-type house will be the most suitable solution to solve the problem.

3. Lego block-type housing as system architecture

The meaning and introduction of the system are very important in order to solve the problems of low income families. The meaning of a system may be referred to the architectural concepts and the works of system architects.

The architectural concepts of architecture groups such as Team-X, Archigram, GEAM were cluster, mobility, growth and change, and city and architecture while their works showed the structure, fabrication methods and mechanical facility methods necessary for supplying the Lego block-type house. Later,
System Architecture application image (Archigram)

'Plug-in City' 1964 Peter Cook

Norman Foster, Richard Rogers and Renzo Piano, so called, high-tech architects (Reyner Banham: Theory and Design in the First Machine Age) have used appropriate techniques with most economical efficiency, not with the state-of-the-art technologies. Especially, a work ('Plug-in City') by Archigram, system architecture shows the concept of system architecture very well.

Therefore, system has an important meaning in supplying the Lego block type house while the necessity of the supply is almost consistent with the architectural concept of system architecture. [Growth, Transformation, Economical, Transfer, Rapid Prototyping]

How to supply houses to low income families could be summarized as manufacturing through standardization and mass-manufacturing in a place where they need them. It shall be reasonable in a knowledge that they were in a poor situation due to modernization, urbanization, housing shortage problem and well-being essentially provided.

This study shall provide the Lego block type housing as a solution to solve the current housing shortage problem of the lower income citizens. It seems to be also reasonable that as a good alternative to meet mass-manufacturing of houses, inexpensive supply and housing mobility, mass-producing houses in a plant as Lego block, which was originated from children's plaything, would manufacture them sufficiently and could be constructed in a place where the users wish to live in.

The Lego block type house is a building manufactured by a new concept and could be constructed in a relatively shorter time by laying over units at reasonable prices. In addition, by developing unit models in several forms, the design could be also well-matched with surroundings, and not-crude buildings would form a beautiful town, being helpful for a city view. When buildings are totally aged, the entire residential buildings could be replaced with new units; in case some of them are aged, the only necessary part could be exchanged either. It is also advantageous in view of construction time and cost.

4. Conclusion

It could be concluded that the Lego block housing as a system housing could play an important role to solve economic problems of the lower income class, be a substantial solution for housing shortage and improve their residential environment and the Lego block type housing would correspond to the problem of the low income class in a short term view and be utilized in various ways in a long term view.

Subsequently, this study Lego block-type housing method can create a new rental housing culture as well as provide an opportunity to turn the recognition for rental housing.

5. Reference
1. Shin, Byung Hak, Lee, Sun Koo / A Study on the Improvement of the Urban Low-income Housing and Residential Environments in Korea / Soongsil University / 1990. 4
2. Kim, Min Ha Chio, Hi Hee / A Survey Study on the Housing-Quality Level to the Degraded Housing Districts in Pusan City / Kyungsung University / 2000. 6
5. Shon, Seung Kwang / Development of the Plug-in Model and System as Multi-Family Housing for Urban Common People in Korea / Dongsin University / 1995
6. Peter Collins (1979.3) / Changing Ideals in Modern Architecture / Publised by Taerim
10. The housing comprehensive plan News Release (2004. 03) / Ministry of construction & transportation