

A Study on the Reshaping of Facade and Enveloping in a Stock Apartment Building

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1. Introduction

The percentage of stock housing in urban areas is about 50%, and its environmental qualities and residents' satisfaction decrease as the building ages. Resident's expectation for the better housing frequently rises in compare to a new housing. Further, the physical qualities of stock apartment housing steadily deteriorate. Many residents in an existing settlement lack pride in their house and fail to manage in their homes. Thus many apartment building must be demolished and rebuilt. There is no a trial, in spite of these trends, to improve the stock apartment building, because of the changing of a building is illegal.

A goal of this article is an attempt to improve the visual appearance of apartment housing in order to extend the life span of stock housing. The contents of this article deal with the concept and the transformative process of how existing apartment housing can be changed in shape and in its possibilities. Its concerns are as follows: 1) the monotonous shape of apartment housing in Korea 2) the need for a desirable appearance from well designed housing project 3) to extract transformative elements through an analytic approach of what constitutes a desirable appearance.

2. Identity and Preference for Apartment's Appearance

2.1 Housing Identity for social members as a sign of a personal identity or as a non-verbal sign for a Housing plays an important role as a symbolic environment for establishing a role group identity(Rainwater,1966 : Gans, 1962).¹⁾ If we feels a weak identity, which gives a sense of belonging, and it is difficult for an individual resident to avoid the question " Who am I ?"(Human,1994).²⁾

In this point of views, the apartment buildings, a representative housing type of Korea, which is characterized by a linear block type facing south, an uniform building, and by the organization of floor plans has not been intended to show identity by a facade. These typical types of an apartment's appearance were responded by people as that present the pattern of a color tone and scheme had a neat, clean, and stable image, but it did not have a variety, interesting images', and representing a variety of subcultures.

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2.2 Deterioration of Appearance and an Attempt to Improve it

The variation between blocks, the height and shape of apartment block, and the type of balcony was found to be related to visual preferences. The variables of the image of apartment block include the roof type, the materials and color of envelopment, the shape of the block, and the type of entrance.³⁾

The appearance of the stock housing having the same state as the original design and construction, does not meet residents' higher expectation for new design. The higher the level of expectation is, the more dissatisfaction there is with the appearance of the old apartment housing.

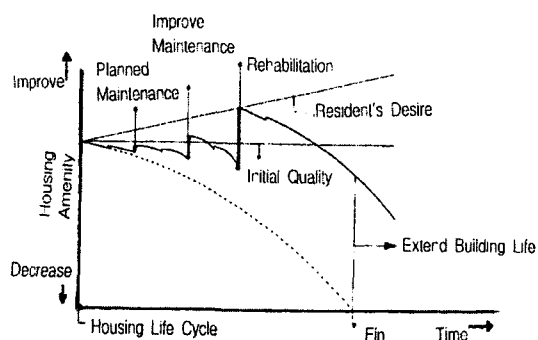


Fig.2 The Gap between the Deterioration of a building's Performance and the Level of User's Expectations⁴⁾

Figure 2 shows that the housing qualities, depending on the time, decline and expectation for their living environment rise higher than before. If the living environment is not upgraded, residents will be dissatisfied and may give up their housing. Whether housing will be demolished or rebuilt, or improved can be a critical point. If a building are not improve, many people abandon the existing apartment. In the context, it should be considered that the remaking of building appearances regarded as one of the solution in coping with the management of deteriorated housing.

2.3 Response to Transformation of Appearance of Stock Apartment Housing

According to the survey conducted by the residents living in deteriorated apartment housing in Japan⁵⁾, 57.9% of the residents wanted to live in their housing. If it is necessary to improve their housing, their favorite approach to renovation is converting outdoor balcony to indoor, and they want to unify two dwelling units into one, to extend a building together, to maintain a shared common facility, and to rebuild the housing. However, while the survey shows that Japanese have a strong desire to improve their housing, nevertheless, there are some difference between Japanese and Korean, who preferred rebuilding to any other type of renovation.

3. Remaking of Building Shape

3.1 The Process of Image Transform

In order to escape the monotonous appearance of apartment buildings, reshaping is discussed and applied in terms of a vertical/horizontal rhythm, centrifugal composition, a plastic element in plain facade, with an accent of a gestalt icon, the configuration of design element, the addition of irony and wit in elevation, the

expression of an accent in volumetric aspect(Deilmann,1987: Sion Gu, Se Uk Sohn,1997)⁶⁾ These kinds of issues can be applied in new housing projects, and we can get an idea about the concepts of exciting apartment from recent new ones.



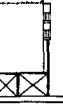



Typology		Diagram & case	Properties
Addition	addition roof		-Vertical addition of a flat roof and water tank -dynamic change of the skyline
	dwelling unit expansion		-Mass addition through dwelling unit -Various volumetric shape
Removal	make a pilot		-Short circulation -Open space
	remove roof		-Dynamic change of the skyline
Overlapping	additional design factor		-Major element reforming -contrast with old and new one
Iconographic	color and material		-super-graphics techniques -contrast of material

Fig. 3 Changing Ttype of a apartment building shape

We have to adapt existing design contexts, if we will try to change the existing shape of the building. So we should first consider the context of the facade, if one exist and how to remake it. If the facade of an existing building is dull, we can follow contextualism that places a new element on the existing facade. The contextualism, to get a new design element from another project will be a useful, and the typology of the remaking facade can be addition, the removal, overlapping, through deconstruction, anatomy and configuration of the building envelopment.

3.2 Transform Typology

1) Additional Transform

The additional transform is a means to produce various elements from a monotonous building in order to escape 'by placing a new element on existing one as a basis'⁷⁾. It is new face requiring minimum change and action. The additional types are as follows: Addition of a common space on the ground floor, mass addition of dwelling area⁸⁾, roof addition of a building, and its concept can be applied to entire complex.⁹⁾

Most roof shapes in existing apartment building appear as a linear box, with the same height and with a very simple shape which consists of flat roof and water

tank as in vertical elements. In these context, we can expect dynamic changes in the skyline of the flat apartment. With a partial expansion of the dwelling in an apartment building toward exterior space, not only do we get a new floor type and enhance its living quality, but also we extend mass which can be a strong element changing box into various volumetric shapes.

2) Removal of a Part

It is to necessary to remove a part of a building and change the shape in order to get variations from a monotonous design. In a partial removal of existing building composition, we can make an opening on the ground floor which is a path to closed place and remove the roof floor or mass, in part, to make a change in the skyline. This type of a change and removal in part are intended to make a path, to make a new space, to convert to a common function and to develop new and various shapes.

3) Overlapping Layer

Most of the existing apartment housing has a linear and plain wall; therefore it is very difficult to experience any variety of volume or surface. We can attach an element of an overlapping layer to an existing surface to get a new feeling in the context. An additional new element is located on the ground floor, in the upper part of the building. It thus creates a new relationship with the original square.

In the case of the existing apartment buildings, the major exteriors consist of the mortar and painting finish on concrete, and windows with aluminum sashes. The balcony at the front of living room has a railing with material finish such as paint on steel, stainless steel railing, etc for lighting and ventilation.

4) Pattern and Iconographic Shape

In the case of buildings, where their colors belong to white-family and are too simple or too stable, it is necessary to build an image factor using colors good for adding iconographical shapes. Employing super-graphics techniques might help change iconographic factors within the system of existing housing management.

Additional design factors using material, such as glass, wood and aluminum in contrast to concrete, make it possible to create fluent images in rhythm, shape and repetition.

4. Decision Making in Building Transformation

To change of the appearance of a building, there must be the active involvement of the residents in a settlement. The involvement of residents can ease conflicts between different opinions that may emerge.

Each dwelling unit can have an individual decision-making vote, not only in the transformation of indoor space but also in the expansion of a building, which will have an individual identity depending on the facade of the dwelling unit. With the installation of windows at the balcony, we could use the installation positively to create change, diversity and rhythm with their unique colors and materials of individual housing units, based on united materials and colors of whole buildings.

The dwelling unit can have a regular shape, but its variations of the unit can be

adapted. If anyone use window frames of different materials, color, pattern, or shape, it could make a new accent in just the context, but it may also be a cause to a confusion and disorder. A design guideline can be applied in order to promote residence' active involvement in changing the plain facade and appearance.

Tall and linear apartments can be divided into some parts of a vertical unit like a staircase element. This part and unit, vertically partitioned by the factors of staircases in the rectangular apartment buildings, are visually articulated from other parts of the buildings. This condition gives a great chance to partly demonstrate new types of change and individual identity in the long, continuous, rectangular shapes¹⁰⁾. Therefore, it would be possible to improve partly if dwellers are willing to pay costs and there is no disagreement against partial changes.

It seems unreasonable to improve existing buildings based on the view that the whole building is the design range. It might be more appropriate to review the possibilities of decision-making which gives individual identity and independence in the level of buildings when considering the design range.

5. Conclusion

The appearance of the existing apartment building can be transformed into a new one. It is a very useful when a deteriorated settlement is confronted with the time how to choose the improvement or rebuilding for the amenity of residence. Even though old ones have a limit to changing volume or facade, they could remake a new fashion.

These kinds of the renovations need the active involvement of residents to promote decision-making in the various of the old building, and the types are as follows : by a dwelling units, a partial mass in a building, and a building unit. Ways of remaking types of the building shape include painting, a partial change of materials, the extension or removal in apartment units. The type can correspond with existing building type and degree of building deterioration.

Many people think that these kinds of activities depend on economic situations of a resident. But the problem of housing management can also be considered in socio-welfare aspects. The extension of the housing life-cycle has a very positive aspect for national management.

Notes

- 1) Housing Culture Research Group translated(1994), Housing, Culture and Design, Shingwang Press, Seoul, p216
- 2) Housing Culture Research Group(1994), Ibid, p219
- 3) Chunsoo Lee, & Woogap Shim(1993), An Analytical Study on Categorization of Cognitive Cues in Highrise Apartments, Journal of The Architectural Institute of Korea Vol.9 No.3, pp21-23
- 4) Jinsook Lee, Wonduk Cho, &Oyeon Kwon(1996), A Study on the Establishment of the Standard Colors and the Practical Guide for Color Planning in Apartment House Exteriors, Journal of the Architectural Institute of Korea Vol.12. No.1, p75
- 5) Institute of Architectural Research(1995), Maintenance and Renewal of a Collective Housing, Architectural Design Source Book, Japan, No 50, p15

- 6) Hong Gil Moon(1993), A Study on Housing Improvement System: Adaptive Remodeling of Old Mass Housing in Korea, Sunggunguan University, PhD dissertation, Korea
- 7) Sion Gu, Seuk Shon(1997.10), Variations in Exterior Design on Apartment Buildings, 1997 conference Proceeding of Architectural Institute of Korea, Vol. 17. No.2, p138
- 8) Sung Uk Yang(1999), A Study on Renovation System of Existing Collective Housing, Tokyo University PhD dissertations
- 9) Statistics of Korea Society, "Living Area for a household in a house were increased from 35.9 m² at 1970(GNP 252 \$), 45.8m² at 1980(GNP 1,598\$), 51m² at 1990(GNP 5,883\$), and 58.9m² at 1996(GNP10,547\$).
- 10) Seung Kwang Shon(1996), The Remodeling and Renovation for the Reuse of Slum Apartment in Korea, IAPS 14th International Conference at University of Stockholm, Sweden
- 11) For example, it is possible to define a unit, which can be changed based on the grouping rules of 10 units in the five-story apartment building with staircases and 30 units in the fifteen-story apartment building.

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