

Remodeling for Sustainable Building

KIM, Sangmoon

Background and reasons

Backgrounded on high growths since the 1970s, active investment continued in the building sector in Korea. As a result, over 7 million buildings were built by December 2001. Residential building took up the largest portion at about 4.3 million buildings or about 73% of the total.

Supported by the government's continued policies to expand housing supply, the housing supply rate reached 98.3% in 2001 with 11,892,000 new homes built. By the end of 2002, the housing supply rate was up to 100%.

Of the new homes, single unit homes numbered 4,436,000 (37.3%) while public housing (or multi-unit buildings such as apartments) took up 62.7% at 7,456,000 new homes. In particular, the number of homes that are over 20 years old, at 2,400,000, account for 24%. The number of public housings that are 20 years old is 480 or about 6%. This indicates that the portion of old homes is expected to rise rapidly.

Various facilities in the buildings that were built in the 1970s and 80s have aged over the years, and the floor plan and the structures are no longer suitable for the new life styles. Hence, complete demolition of old buildings and rebuilding became popular beginning in the 1990s, with the remodeling centering mostly on public housings.

However, among the buildings being demolished, there were many without structural problems so that they could continue to be used with minor modifications and repairs. Rebuilding not only wastes resources, but is also bringing about many side effects such as from environmental damages.

In particular, rebuilding usually involves taking low to medium height buildings and building much taller ones with larger floor area for each unit and additional housing units. Rebuilding costs in these cases are borne by the sale of these additional units while the existing residents get larger homes. Thus, it benefited doubly in a way and was why people were strongly for rebuilding.

However, local governments have decreased floor areas of some apartments that are being rebuilt, thus bringing down the economic benefits, which had led to putting brakes on many unconditional rebuildings.

In addition, some modifications and repairs of buildings allow partial expansion and rebuilding and become hindered by the Building Act and other relevant regulations, making modifications/repairs rather difficult in reality.

Therefore, to minimize waste of resources and social side effects of irrational rebuilding, the government has been promoting remodeling where buildings are not completely demolished but continue to be used after partial modifications and repairs.

In September 2000, methods and institutional improvements for stimulating remodeling and preparation of new buildings were drawn up through a research done by the Korea Construction Research Institute, Construction Industry Research Institute, and Korea Housing Corporation as a research project outsourced by the government.

Remodeling projects were carried out for 43 apartments owned by the Korea Housing Corporation from December 2000 to August 2001 through which many problems in remodeling and methods for institutional improvements were identified.

Stimulating Remodeling

Ways to promote remodeling prepared by the Ministry of Construction and Transportation on August 20, 2001, following outsourced researches and pilot projects are as follows.

Amendments of regulations

Enforcement Decree and Enforcement Regulations of the Building Act

Enforcement Decree and Enforcement Regulations of the Building Act have been amended to allow mitigation on landscape, building lines, and heights of building for buildings that are 20 years or older when needed. Eased regulations are determined through deliberation by a local architectural committee.

To allow flexible mitigation of buildings in both level and scope taking the condition of the building itself and surrounding environment, it has been that such decisions will be made by local architectural committee composed of experts. In addition, for full study of structural safety during the remodeling process, it has been required that all design and supervision shall be done by certified architects.

Mitigation criteria have been determined along with the mitigation of standards to ensure that they are not abused. For example, expansions are to be limited to 1/10th of the total area and elevators/stairs/parking have been set as mandatory in order to enhance functionality. And, in cases of public housings, no additional housing units are allowed.

The Enforcement Decree was amended on 15 September 2001 and the Enforcement Regulations on 28 September 2001.

Housing Construction Promotion Act

To facilitate administrative procedures, mayor/do governor is required to approve building permits pursuant to the Building Act when giving approval for remodeling. Responsibility for repairs has been placed with the contractor by requiring a deposit for post-remodeling repairs.

Enforcement Decree of the Urban Planning Act

In order to apply consistent standards in easing building regulations and enhancing city lines in areas where potential remodeling buildings concentrated, legal basis for designating “Remodeling Management Zones” has been prepared. Also, prepared is mitigation of regulations when remodeling in areas where there are restrictions such as limitation on heights of buildings.

Design standards for new buildings

To induce continued promotion of remodeling in the future, design standards have been prepared to enhance internal strength of buildings, to facilitate maintenance, and to enable changes to interior structures more easily.

For example, shafts and ducts are to be installed jointly in the basement floors for easier inspection and repairs. And, pipelines are to be installed in common spaces such as stairway areas and hallways, and installation of double pipelines is strongly recommended.

Support from the National Housing Fund when Remodeling

The National Housing Fund will be used to support remodeling of public housing projects. Initial support of 50 billion won was secured and allocated for the purposes of remodeling public housings since 6 May 2002.

Pilot remodeling project

Yonggang Apartments, consisting of 9 buildings and 300 housing units, in Seoul’s Mapo District was selected as a pilot project by the Korea Housing Corporation and remodeling was begun on 14 August 2002 for completed scheduled sometime in July 2003. This project is the first official pilot project in public housing remodeling and is expected to serve as the first opportunity for fully stimulating remodeling.

Conclusion

Remodeling in Korea is still at an insignificant level compared to European countries, Japan and other countries where remodeling has been widely adopted. As mentioned already, more active remodeling is expected in the future with the preparation of legal basis, but there still remain many impeding factors such as ill management or loss of

design blueprints for old buildings and the fact that many of the apartments have wall structure systems that are not amenable to modifications/repairs.

The government's plan is not aimed at seeing immediate results and gains, but will be aimed at continuing to promote "sustainable building" in newly built buildings. That is, encouraging constructing buildings taking future remodeling into consideration.