RESEARCH ON HOUSING PREFERENCE : PLANNING A MODEL STEEL HOUSE

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In line with a worldwide concern about environmental protection and everyone's desire for an economical house, a steel house is recommended for the coming next generations. A steel house, broadly, includes all houses whose major structure is steel framed. The steel house proposed in this study refers to a steel-framed house, which is constructed like a traditional wooden 2x4 structural system, with wood frames substituted by light-weight steel. While carrying the appearance of typical wooden houses, the steel-framed houses have certain advantages: they are cost efficient, dimensionally stable, noncombustible, termite resistant, durable, strong, and recyclable, but light in weight. They also enable architects to design homes with more open interior space, and offer more flexibility in planning,

Steel houses have been globally distributed United States and Australia are countries where steel housing construction has become popular. Several hundred steel houses have been constructed in the United Kingdom and Canada as well, while in France, Poland, and Japan, steel housing is yet to be commercialized. In the United States, the number of steel houses increased dramatically from 500 units in 1992, to 1,500 units in 1993, to 3,500 units in 1994. AISI estimates 75% of new housing to be constructed with steel by 2010. POSCO, a flagship steel company in Korea, has constructed 6 model steel houses in the area of Seoul, Pohang, and Kwangyang in order to assess their marketability.

In order to make a steel house one of the housing prototypes of the future, it is necessary to learn more about the new structural system of steel-framed houses and steel house planning. This research, sponsored by POSCO, evaluates the habitability of the model steel house, an evaluation previously conducted by female housing professionals in March 1997. The current study evaluates building performance as experienced by visitors to the model steel houses. Questionnaires collected from 1,500 visitors to the six model steel houses in June 1997, were analyzed by the SPSS-PC+ program.

We investigated visitors' preferences with regard to several space components: the master space, community space (living room and dining room), housekeeping area (dining room, kitchen, and utilities) and private space (bedrooms). For each space, questionnaires included questions about room size, layout, openings, and interior finishing.

Our analysis revealed that visitors' desire for change are mostly centered on the

master space, housekeeping area (kitchen, utility, and laundry room), living room, and bedrooms.

In a typical medium-sized house, the master space consists of several units; 'anbang' (the Korean traditional master room), master bedroom, exclusive bathroom, and dressing room. Our survey indicates that compared to the whole area, the master space is too large and somewhat overwhelming. People want the flexibility to rearrange the master space, according to the family's requirements.

For housekeeping, utility space is an important factor. But utility rooms are small in most model houses, distantly located from the kitchen in some houses. People want a more carefully designed utility space, in which to store extra food and goods and also to serve as a supplementary kitchen for smelly cooking. Dining rooms and kitchens of most model houses are of the 'DK' type, in which dining rooms and kitchens are located together. It reflects new lifestyles and new concepts of the dining area, which is now perceived as cheerful family life. People prefer this new concept, and also prefer the 'L' type counters over the 'U' type.

For living rooms, larger areas are required, except the 'Kwangyang 30-pyung' type. Because the center of family life has been transferred from 'anbang' to living room, more composite functions (guest room, hobby room, family room) are required of the living room. More detailed designs are required, besides just increasing the living room area.

As for bedrooms for children, most people want more flexibility in the size and number of rooms. Moving partitions or furniture partitions are recommended instead of fixed walls.

Based on the surveys, this study proposes guidelines for steel house planning, which have recently been reflected in 700 units of a steel house residential community that is being constructed by POSCO for their employees in Pohang.

We conclude that the steel house has a potential to become a future housing prototype in Korea. But to distribute steel houses successfully more detailed planning is necessary to conform to Korean lifestyles. The result of this research should help establish planning concepts and design techniques necessary to promote successful steel house residential environments.