

Preliminary Study on Adaptive Design of Interior Space of Transitional Housing Based on Life Cycle

Lisheng Chen

The Tourism College of Changchun University, Changchun 130000, China

525802150@qq.com

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Abstract: For transitional housing, there are various transformation schemes for family structures under different life cycles to meet their usage needs. This article analyzed the three types of transitional housing, that is, the family nature, population structure and living needs. Through the transformation of the internal functional structure and the adaptive design of the interior space, we explored how to design a targeted and highly adaptable house that can be transformed according to different family structures to meet the needs of different indoor objects of the house for the indoor space of the house.

1. Introduction

As China's urbanization speeds up, cities are continuously expanding in scales, and a large increase in floating population has brought about a rapid expansion of urban population. Newly-employed college students and ordinary wage earners are called "sandwich" groups. Due to limited savings and relatively low wages, it is difficult for them to afford a house at once. They usually buy a transitional small apartment. We refer to the house they bought for the first time as "transitional housing." How to fully utilize the limited space as it usually is the case has gradually become an issue of concern in the design community.

However, a considerable number of transitional small-family dwellings simply divide each functional unit in the design, while ignore the characteristics of the dwelling in terms of objects of use and modes of family life. This also means that we have to solve the big problem of how to improve the adaptability of transitional housing.

2. Definition of transitional housing

The housing types of transitional housing generally include low-rent housing, affordable housing, small-set commercial housing with low and medium price, and capped-price housing. There is currently no standardized and uniform definition of the area of "transitional housing". The standard for defining the concept area of transitional housing in this article is based on the national policy "Six Governmental Suggestions on Housing" (Nine ministries and commissions of the State Council promulgated six policies on regulating the real estate market in 2006.). It can be defined from the following aspects:

The construction area of newly built low-rent housing units is controlled within 50 square meters; the construction area of affordable housing unit is controlled at about 60 square meters; [1]

The building area of small-set commercial housing with low and medium price is controlled below 60 square meters, and it usually has one room integrating the function of a kitchen, bathroom, and bedroom. This includes ultra-small hotel apartments and single apartments. [2]

I believe that transitional housing refers to a house with a building area of less than 60 square meters, with a relatively compact space, yet complete functions. The area of each functional space is relatively small, but it can meet the basic needs of people's lives.

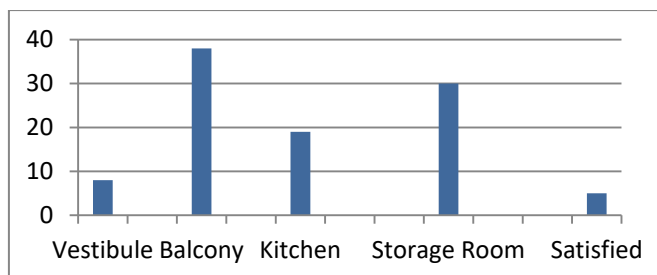
3. Status Analysis by Investigation

The demand for housing by the family structure is closely related to the family population structure. Studying the life cycle of the family is helpful to find the characteristics and changes of the basic housing needs of the family. The life cycle of a full life family includes five cycles: single, newly married, childbearing, accommodating all family members, and leaving the house.

However, the family life cycle of transitional housing studied in this article includes only three cycles: single, newly married and childbearing.

Questionnaire Analysis. According to the research content of this article, in order to find out the current status of the use of various indoor functional spaces in transitional housing, the author issued a questionnaire to 100 residents of transitional housing.

Table.1. Survey statistics of indoor space satisfaction



According to the survey results, in Table 1, due to the limitation of area, most of the functional units in transitional houses are missing, which are mainly concentrated in the foyer, balcony, kitchen and storage room.

8% of dwellings do not have a separate entrance hall, that is, the entrance door opens directly to the living room. The interior setting is clear at a glance, which destroys the privacy of the indoor space.

38% of homes have no independent balcony, some of which just have bay windows.

19 % of homes do not have separate kitchens, and this type of transitional housing typically appears in apartment-style homes.

30% of residents feel that there is no enough storage room for sundries in the room.

Only 5% of residents feel that their functional units are relatively complete and can meet basic needs.

Household survey analysis. The author also took Changchun City as an example, and selected three types of families under three different life cycles: single, newlywed, and childbearing. The households were surveyed according to their type. The following are the specific conditions of the three households (Table 2):

Table.2. Household survey statistics

Survey households	Type	Area	Number of Residents	Occupations
First type of household	One room integrating all the functions	32.9m ²	1	Freelance
Second type of household	One bedroom one living room	46.5m ²	2	Teacher
Third type of household	Two rooms and one living room	57.6m ²	3	White collar

4. Analysis of Adaptive Transformation of Household Surveys

The objects of the household survey for studying transitional housing are young people under the age of 35, whose family modes include single families, childless young families and young nuclear families. Because of the differences in occupational nature, living habits, family structure, and family

lifestyle of these three types of people, we need to carry out adaptive design and transformation of apartment types according to the characteristics of residents.

Single family units. With the acceleration of modern life and increasing work pressure, many couples in China have late marriage and postpone childbearing. These families have their own needs for housing because they have not given birth.

Family subject: mainly single white-collar young people who have just worked. They usually took higher education, have strong working ability and easy to accept advanced ideology, culture and values; with average salary level but high work pressure.

Life mode: The focus of their lives is completely focused on study and work, the family concept of unity is not strong, and the home often becomes an extension of the workplace; many of them belong to the SHOH family, and the study or office space has a larger area and proportion than other families; unique thoughts make them attach importance to indoor leisure and entertainment space. In addition, due to irregular eating habits, they generally do not have high requirements for the kitchen, and young women have poor ability to do housework.

Analysis of adaptive transformation: Under the current situation of insufficient housing area, living room functions should be weakened according to their living habits to meet the demand for office, leisure and entertainment space; but when the life style changes from work study type to life communication type, the indoor space can separate the bedroom with light partition from the living room, and change the original integrated one bedroom into one bedroom one hall type, which not only ensures the space of exchanges and holding parties, but also enhances the privacy of the bedroom. (Figure 1)

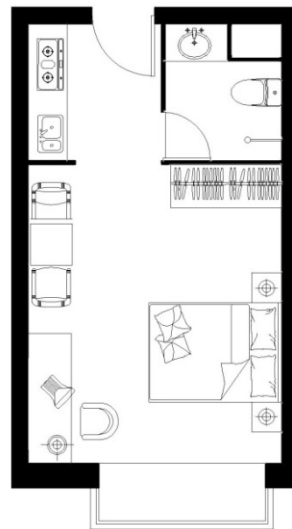


Figure 1. The firsttype of family (Building area 32.9m²)

Childless young families. Family subject: There are yet no children after marriage. The two young couples live together. Although living habits are on the right track, they still have the nature of singleness and are about 30 years old.

Living mode: The husband and wife have more entertainment activities, so the furniture in the living room is more standardized and reasonable, and life is moving on a normal track. The leisure tables and chairs on the balcony can enrich the life of newlyweds. Family gatherings increase the chances of cooking, but most of the time they won't cook.

Analysis of adaptive transformation: Because kitchen is not used often, it is set to open to expand the sense of space. The layout of the living room has begun to be regular. They can add leisure tables and chairs on the balcony; they can add cabinets on the wall of the living room to increase the storage function. The layout of the toilet is centralized. (Figure 2)

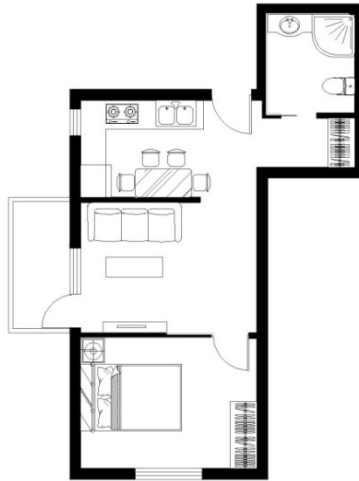


Figure 2. The second type of family (Building area 46.5m²)

Young nuclear family. When a child is born, the family structure also changes, and the original indoor living space and living environment will change as well. Therefore, a targeted design of the indoor space is required.

Family subject: a family of three with two young couples and a child. Sometimes it will be a composite family form of 2 (young couple) + 1 (only child) + 1 (one of the parents of young couple), the couple is generally around 30 years old, and the child is in infants.

Life mode: for a family of three with a child and young couples, the pressure of the couple not only comes from work but also cares about the family. Because the child is in urgent need of care, in addition to the couple, they often need both parents to take care of the child; the one-bedroom design of the house is not practical enough, considering the housing issues of the parents of the husband and wife during the child's care. In addition, the increase in the number of people will also bring about the adaptability of toilets.

Analysis of adaptive transformation: The current design focuses on strengthening the functions of bedrooms, living rooms and dining rooms to meet the needs of an increasing population. In order to prevent the use of crossovers to save time, the dominance of toilets can be adjusted, space can be flexibly divided, and the floor plan is transformed into a front room type or a separate type. The laundry room function can be transferred to the balcony. A multifunctional room can be set up indoors, which can be used as a bedroom when the elderly come to look after children, but can be converted into a study or storage room when no one is living, or a children's room when the children are older. (Figure 3)

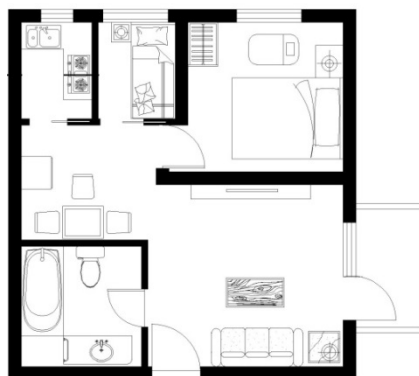


Figure 3. The third type of family (Building area 57.6m²)

5. Conclusion

To make the interior space design effective, we must deeply understand the living needs of the residents at different life cycle stages, and design an indoor space that meets the functional needs of the user according to their current living needs. At the same time, future development needs must be

considered, so we need to design with reserved room. Therefore, we must thoroughly study the unique psychological needs of an increasingly number of personalized families, and use this to design residential units that are compatible with the user population, so as to achieve the optimal allocation of residential resources.

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