

Print ISSN: 3058-9266 / Online ISSN 3058-938X

Study of Residential Well-being for Child-rearing

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Received: November 27, 2024. Revised: December 24, 2024. Accepted: December 31, 2024.

Abstract

Purpose: The article discusses the changing trend of inter-generational cohabitation structure under the background of China's birth policy change, meanwhile analyzes the behavioral patterns and housing demands of parenting families. **Research design, data and methodology:** On this basis, the paper makes a thorough study of the housing types and related concepts that are beneficial to child-rearing. **Results:** The design results of convenient entrance area, variable LDKG integrated communication space, "Growth Type" household research, as well as a new "Partner list" adapted to inter-generational cohabitation are presented. **Conclusions:** This study provides references for the future design strategy of child-friendly housing well-being.

Keywords : Child-rearing house type, LDKG integrated design, Growth house type, Multi-generational cohabitation house type

JEL Classification Code : R3, R21, R23, R30, R38

1. Introduction¹²

Over the past decade, faced with China's low fertility rate and accelerated population aging, the state has implemented a series of birth policies ranging from "two children for parents who are only-child", "two children for either one parent is only-child", "two children for all", and "encouragement of three children". The State is gradually building up a supporting system by implementing birth policies ranging from "two children per child", "two children alone", "two children across the board", to "encouraging three children". Under the background of this policy, the generation number of families shows a general increasing trend, and the changes of family living structure and functional space requirements are increasingly prominent. However, there are only a few studies on housing design and household type to adapt to the new policy. The new type and new concept of housing design, especially the residential well-being strategy for child-rearing, need to be studied in depth.

2. The Changing Trends of Inter-generational Cohabitation Structure

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Since the founding of the People's Republic of China, in the face of the economic situation and demographic trends in different periods, China's birth policy has undergone remarkable changes, which can be roughly divided into three phases:

the first stage is the stage of encouraging birth from 1949 to 1978. The government adopted a series of measures to promote population growth. Especially at the beginning of the founding of the People's Republic of China, female employment is not universal, meanwhile the response rate of “Glorious Mother for five children” is high. The second phase was the one-child policy from 1978 to 2013. In 1978, the family planning policy was promoted and piloted in cities and towns. In 1982, the “One-child Policy” was written into the constitution and fully implemented. The third stage is the gradual establishment of a pro-fertility system since 2013. In January 2016, the People's Republic of China's population and family planning law was amended to “The state encourages couples to have two children”. In May 2021, the Politburo of the Communist Party of China (CPC) reviewed the decision on optimizing fertility policies to promote long-term balanced population development, implementing a three-child policy for couples and supporting measures. A summary of the development stages of our fertility policy since the founding of the People's Republic of China is shown in Table 1.

Table 1: Stages in the Development of China's Fertility Policy Since the Founding of the Country

Stage	Period	Maternity policy	Note
Fertility Encouragement Stage	1949-1978	Promotion of incentives such as “Glorious Mothers” and “Heroic Mothers”	Encouragement of childbearing 1949-1953, with a gradual policy shift in 1974
Family Planning Stage	1978-2013	Promoting late marriage, late childbearing, fewer children and optimal births, thus controlling the population in a planned manner, and having only one child per couple in urban areas	In 1982, “family planning” was enshrined in the Constitution as a basic state policy.
Stage of Building a System of Support for Childbearing	2013-present	Optimizing fertility policies for long-term balanced population development	“Two children for parents who are only-child” in 2013, “two children for either one parent is only-child” in 2014, “two children for all” in 2016, and “encouragement of three children” in 2021.

In the course of the evolution of the birth policy in different historical periods, the structure of inter-generational cohabitation has also undergone a sudden change. Between 1980 and 2006, people born in the reproductive stage were encouraged to grow up as young adults, usually with four to six siblings, and parents generally chose not to cohabit with the core family, the urban household structure is mainly composed of two generations and three families. From 2007 to 2016, the only child became the pillar of family, and three persons from two generations are still the main cohabitation pattern. The situation of parental assistance or phased cooperative parenting became more common, so as the situation of phased cohabitation. Since 2016, as the number of “Two-child” and “Three-child” families has gradually increased, the multi-generation cohabitation model has gradually become the mainstream cohabitation form of such families, forming a transition from a core family to a “three-generation multi-family” backbone family[1].

Table 2: Mainstream Trends in Inter-generational Cohabitation Structure

Period	Main components of the three generations	Mainstream parenting models	Major cohabitation structures
1980-2006	4-2*-1	Parenting	Two generations and three families as “nuclear family” members
2007-2015	4-2-1	Collaborative Parenting	Two generations and three families are the main cohabitants, with an increase in segmented cohabitation
2016-Present	4-2-n (n=1-3)	Cohabitation Parenting	Increasing inter-generational cohabitation

Note: * represents the majority of siblings.

3. Behavioral Studies and Residence Requirements of Childcare Families^[2]

The survey shows that the main parenting activities of the parenting families were far more time spent home than in other regions, with 74 % working days and 65% rest days respectively accounting for total parenting time. The time proportion of family child-raising activities in the order of working days is taking care of children, tutoring study, accompanying play, picking up and dropping off children. The rest days were accompany play, tutoring study, taking care of children, picking up and dropping off children[3].

The family of child-rearing usually takes the raising of the next generation as the core behavior, which differs from the living behavior pattern of the ordinary family in the aspects of parent-child accompany, study and life, education and training, household work, entertainment activities, etc. , there is a bigger space demand in receiving space, housework space, study space, parent-child space, bedroom space, communication space and so on, at the same time, it also puts forward higher requirements on the security, convenience and variability of living space. The residential requirements adapted to the different behavior patterns of parenting families are detailed in table 3.

Table 3: Behavioral Patterns and Residential Requirements of Child-Raising Families

Behavioral model	Residence requirements
More household chores, cleaning, bathing, cooking, etc. than the average household	Kitchen and bathroom are large, and the house type requires a convenient layout
Children grow up with a lot of clutter	Need more storage space for easy and instant organization, whole-house implanted design
Cultivate children's sense of labor	Partially open and low storage cabinets, shelves, hooks
The changing needs of child development	Larger children's rooms, sleepy bedrooms transformed into functional composite, change-friendly, growing bedrooms
More parent-child and entertainment interaction	The need for a larger multi-functional living room space, breaking the traditional living room that is the positioning of the meeting space, viewing space
More communication scenarios for multiple generations	LDKG integration, spatial integration, functional integration
Refined, healthy parenting	Paints with low volatile organic compounds and building materials with an environmental rating of E0 or ENF.
Children have more active behaviors and lower awareness of safety and self-protection	Use furniture designs with rounded corners rather than sharp corners to prevent injuries caused by children bumping into them. Raise the position of window handles or add safety bars and locks to prevent children from falling
High requirements for light and natural ventilation	Large widths and short depths are required for more light and natural breezes

For children at different ages, the statistical data on the percentage of time spent on child-rearing families' behavioral patterns have also changed greatly, and the corresponding living space needs have also changed continuously.

Families with children in the infant stage need more space for housework and exercise, more spacious kitchens and bathrooms, more convenient and reasonable flow lines, and more emphasis on openness and continuity in the living room. Early childhood needs more space for early education, parenting and recreation, a certain amount of privacy but still easy to watch and care for, and special space to gradually develop hobbies and interests. Then at a later stage, children have a higher need for privacy and more space for learning, as well as a certain need for social space for small gatherings and other family

activities. Behavioral patterns and family living needs of children in different growth stages are shown in Table 4.

Table 4: Children's Behavior Patterns and Housing Needs at Different Growth Stages^[4]

Child Development	Years of age	Behavioral model	Housing needs
Infancy	0-3 years	Infants move from behavioral limitations to practicing crawling and walking, family habits change around the infant's routine, and there is a lot of household activity such as supplemental feeding and cleaning	The kitchen and bathroom and other domestic spaces are large and visually permeable. The baby's room is close to the bathroom, and the kitchen has an ample work surface for supplemental food preparation. Open and safe space for learning to crawl and walk. High requirements for ventilation and lighting.
Infancy	3-7 years	Stages of motor development, hobbies and interests that require more parent-child companionship	Safe space to promote whole-body movement, storage space to develop logical thinking and housework habits, more space for parent-child interaction, moderate privacy for easy care, and learning space for fun and education. Focus on the influence of space layout and color scheme on children's growing habits and heart development.
Adolescent	7-14 years	Learning takes up most of a child's time at this stage, social development period, learning a variety of skill-based sports	Quiet, independent study space, flexible activity space, space for development of regular interests, emphasis on privacy space

4. Studies on household types conducive to childcare^[5]

4.1. Convenient entrance area design

There are many articles such as shoes, hats and bags in the family, and many articles are carried out. Porch storage cabinets, or storage room should be set up at the entrance to place shoes, outdoor toys, clothing or even a trolley. The porch ark design should take both the family members' height and their demands of putting articles into consideration. An integral sits should be set for old and young to changes shoes easily.

Children shall get clean as soon as they're home to develop good hygiene habits and create a good indoor sanitary environment. To achieve this goal, the toilet can be set close to the entrance, so that family members can wash their hands and change clothes right after they get home. Children can also get clean in time after they played with mud and sand, which brings convenience to child-care family.

The combination entrance area design to meet the above-mentioned storage and cleaning needs is shown in Figure 1.

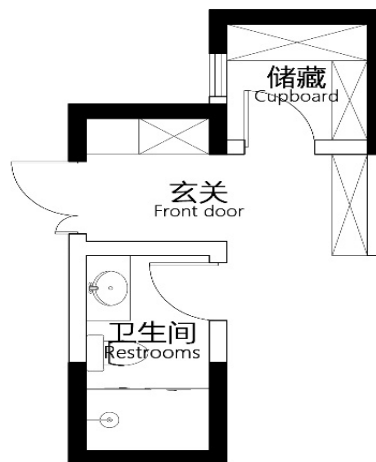


Figure 1. Convenient Entrance Area Design

4.2. Variable LDKG integrated communication space

The process of child-rearing focuses on parent-child companionship and communication. However, the traditional household is too independent and tends to have more partitions, blocking the communication and interaction between family members.

LDKG integration design represents the integration of living room, dining room, kitchen and balcony. The integrated public space would become the core social area of a family. To achieve this, an open and relatively regular space shall be formed during design. Space separation should be reduced and open kitchen and bar in dining area are recommended. There should be no partition walls at balcony, forming a transparent spatial design. The elements above combines together to create a core social space. The living room is transformed from a traditional exclusive place for movie-watching into a multi-functional space for communication, party, study and entertainment. Family members can take care of children during cooking process, to provide companionship during the children's learning process, creating more communication scenes.

Variable LDKG design should also provides a multi-functional integration of the living room, to provide much flexibility, higher rate of space utilization, suitable for different families' needs. For example, a design meets the demands for climbing, walking and playing space in infancy as well as a flexible leisure space is shown in Figure 2(a). At the adolescence stage, the same space can be converted into a combination of learning and working space, as shown in Figure 2(b).

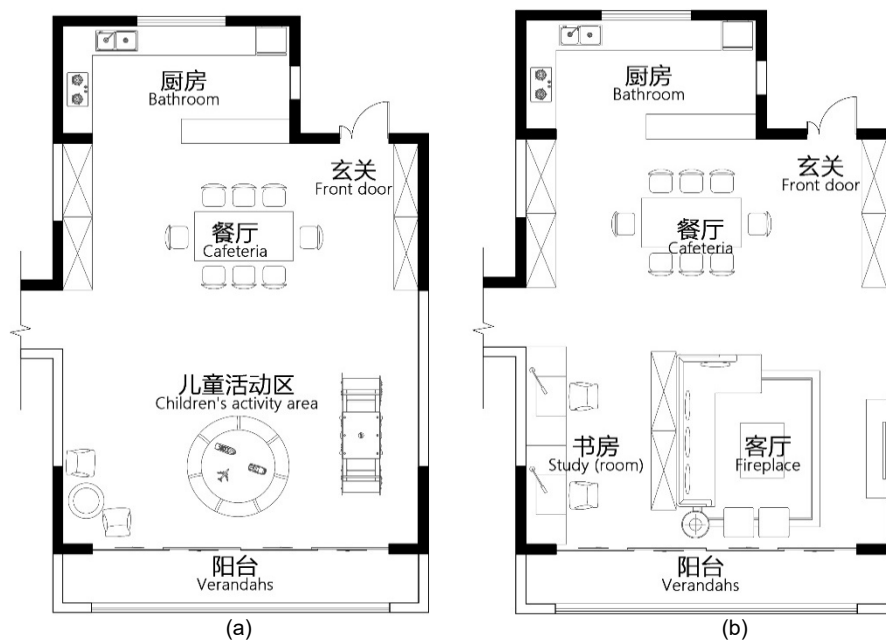


Figure 2. Integrated LDKG Design with Variable Functionality

4.3. “Growing” household study ^{[6][7]}

The generation of “Growth Type” household is an effective measure to deal with the changing number and the changing age of family members. It requires a highly open main structure to reduce the restriction of load-bearing body on the exchange of functional space. The movable assembled furniture replaces the traditional partition walls, providing a continuous effective safeguard for space transformation^[8].

Figure 3 provides a set of “growth type” housing design to adapt to the growth of children and changes of the number of children. During baby period, there are common requirements to combine big and small-sized beds in one bedroom for babysitting, which requires large storage space and flexible entertainment space, as shown in Figure 3(a). Early childhood gradually needs a certain level of privacy, hence the children’s bedrooms shall be divided into two zones with semi-partitioned

furniture, forming a semi-private bedroom space that can also meet the caring demands, as shown in Figure 3 (b). Gradually children will need independent bedrooms. If the second child is born, the flexible layout for two beds in one room would be helpful. Along with children's growth, there will be needs for two independent bedrooms. A storage compartment or a double-sided cupboard can be set to separate two independent areas and allows a certain level of communication, which is space saving and easily optimized, as shown in Figure 3 (c).

The multi-functional bedroom, as a suitable layout for child-raising families, can adapt to children's growing process and the changing number of children at different stages, fully facing of the various functional needs. Families with more children tend to require more flexible space. Take the bedroom layout as an example, there will be more need to a multi-functional layout combines study, sleep and rest.

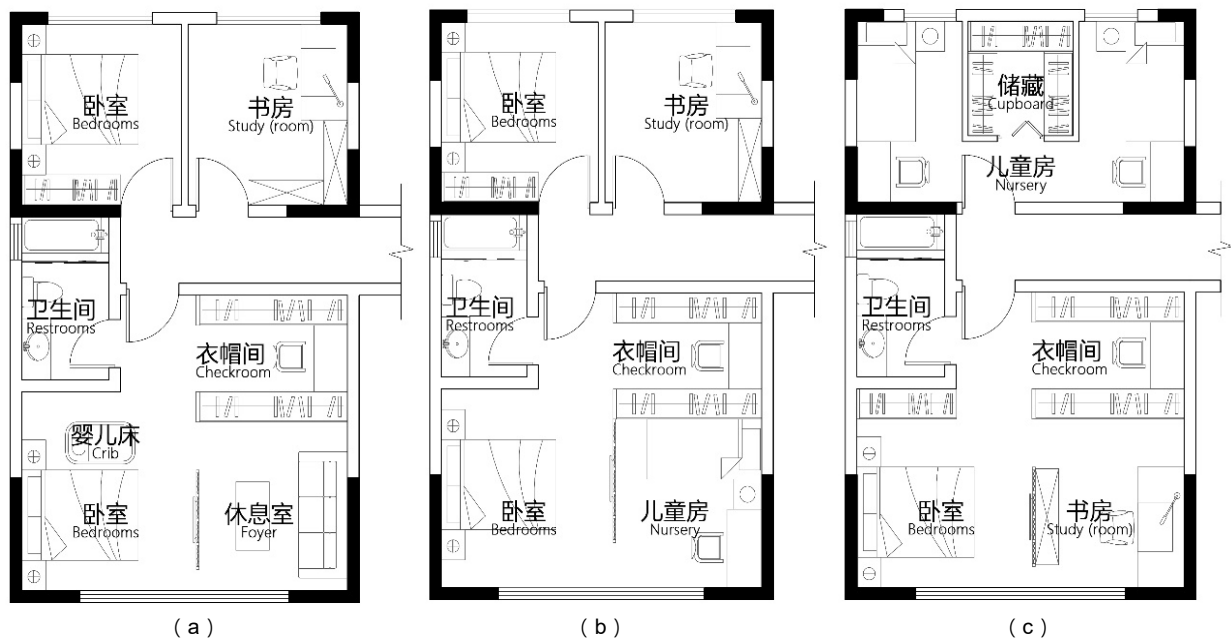


Figure.3. the “Growing” House Design

4.4. New “Buddies’ Layout” for Inter-generational Cohabitation

In the 1980s, there were cases that two different families living in one unit, sharing kitchen, bathroom, entrance space sets. This type of housing, called “buddies’ layout”, is a product of solving the housing problems for the elderly, which has been abandoned nowadays. However, it is worth studying because it has a potential to provide housing layout principles for the three-generation family.

As shown in figure 4, the innovative “buddies’ layout” provides a primary living space for the children and another primary living space for the parents. Those two living spaces are separated by the kitchen, dining room, and living room. Both living spaces have their own independent entrances to outside, divided by flexible partitions, like furniture or decorative screens. The kitchen and the living room are common used for daily communication between three generations. This layout design is effective to avoid inter-generational conflicts in daily life, as well as beneficial to the inter-generational reciprocity of cooperative child-raising and mutual care.

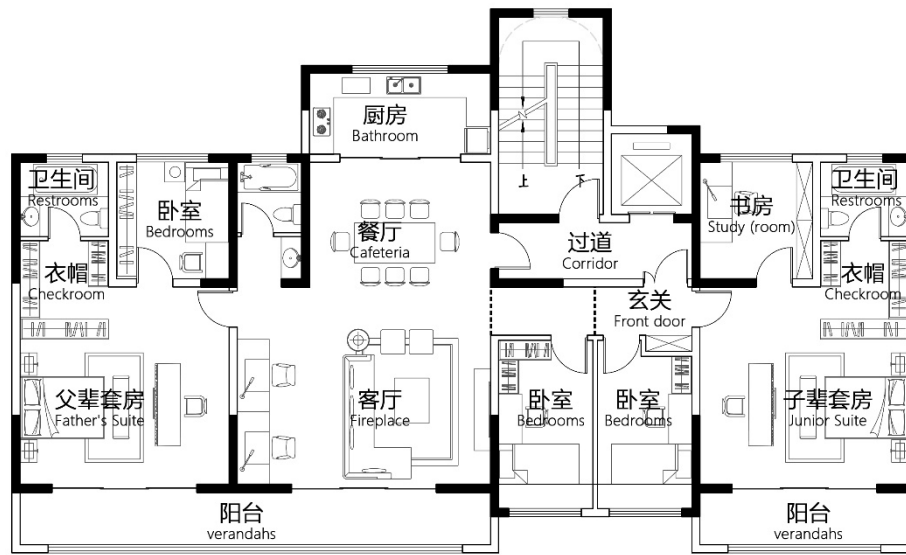


Figure 4: Design of the New "Buddies" Layout Apartment for Inter-generational Cohabitation

(Note: The dotted lines in the figure are flexible partitions, which location can be set according to the actual needs of the family)

5. Conclusion

With the change of birth policy, residence requirement and behavior habit, there are higher requirements for the household layout design and well-being research. Hence, the idea of keeping pace with times, adapting designs and deeper researches are significant to adapt the core needs of child-raising families and explore a better future habitat model.

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