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Vertical Enclosed House with Outside Courtyard: A Design of Unit Residence Adapt to Cultural Psychological Characteristics in Inhabit

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Abstract: In process of intensive land use on small towns, residents are hard to accept the urban housing style because of their cultural psychology. A new form of unit residence of vertical enclosed house with outside courtyard is established, which adapt to cultural psychological characteristics in inhabit. This article discusses the spatial characteristics and environmental quality of the design.

Key words: Vertical enclosed house, outside courtyard, cultural psychological characteristics in inhabit, intensive land use

INTRODUCTION

Low-rise residences that are built almost airtight and close to each other above a stretch of continuous house site create a major residential landscape in densely-populated villages in South China. If it were not for environment quality degradation, difficulty in arranging modern facilities and even high risk of disaster prevention caused by living in such narrow interval, there is a possibility that this high density and compact form of land use could remain unchanged. The fact is, at present, the construction of villages has focused on the intensive land use and space improvement issues in house sites from the beginning of planning general layout. Constructing multi-storey and high-rise unit residence is one amongst many essential measures. However, imitating the “elevator apartment” built in cities into some areas with distinctive cultural features does not seem to be a wise choice because living contents and uncomfortable feelings created by such apartments make low level of acceptance for the villagers. Can we create a “vertical enclosed house” of the day that adapts to the residential psychological needs of villagers.

INTERPRETATION TO CULTURAL PSYCHOLOGICAL CHARACTERISTICS IN INHABIT

Residential buildings in China have always shown in a variety of architectural styles. In North China and central plain, there are Beijing quadrangle dwellings,

Shanxi and Southern Anhui mansion with many courtyards and very high walls that are enclosed by “four water be hall” type residence. Graceful and exquisite courtyards extending deep and quiet are mainly built in Jiangnan (the south region of the Yangtze River). In south region of the Five Ridges, there are Hakka enclosed houses and Chaoshan “4-horse-drawn chariot” residence (Fig. 1).

These compact residences, made of delicate craftsmanship and full of cultural ambience, inherit the village life Chinese people live on being self-sufficient and self-satisfied in the past thousands of years. Is there a unique mentality behind the “enclosed” space pattern? Compared with modern residence, except providing a material space for people to settle down and get on with their pursuit, the folk houses also include one “happiness” that does not exist in modern residence, that is, the inhabit of a family. The folk house in above forms, actually is a unit residence used by many members from a family. The “enclosed” dwelling combination corresponds to its “family”. Architectural space and combination are adaptable to the family inhabiting way, which is the carrier of physical consanguineous family in a patriarchal clan. In other words, “family inhabit” is an important cultural psychological characteristic in country life.

It is absolutely necessary to respect the characteristics of “family inhabit” if it aims at creating a unit residence widely accepted by the villagers. According to the survey on regional cultural mentality for urban residences in Chaoshan area, Guangdong province,

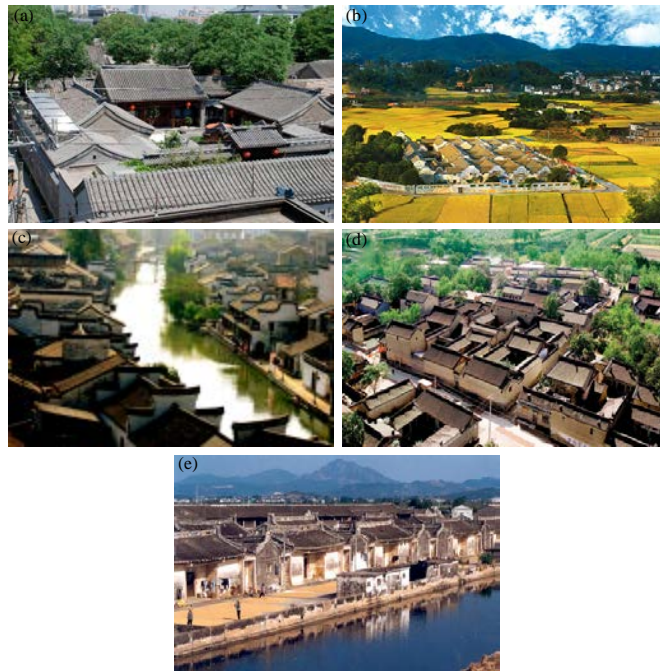


Fig. 1(a-e): Pictures are sourced from network, (a) Beijing quadrangle dwelling, (b) Meizhou enclosed house, (c) Jiangnan river town, (d) Shanxi Ding village and (e) Chaoshan folk house

the author finds that “worship the clan and anti-foreigner to gather strength” is a mode of emotion (Wang and Yu, 2013).

In light of this, in the design and research on village unit residence in Chaoshan area, Guangdong province, the author puts forward an innovative design of “vertical enclosed house with outside courtyard”, seen in Fig. 2-5.

DYNAMICAL INHABIT EVOLVING FROM “SPREAD EVENLY” TO “SPATIAL”

Tree often metaphorically implies family by Chinese people. The structure of family inhabit also resembles like the structure of tree leaves. In traditional folk houses, due to restricted construction technology, each dwelling unit spreads itself on same plane in which interior chamber and roadway are key parts linking each dwelling unit. The spatial location relationship between units is opposite relationship just like the tree leaves, seen in Fig. 6.

In the design of “vertical enclosed house with outside courtyard”, interior chamber and roadway are changed into outside chamber and outside veranda. The whole building space is linked from bottom to top by outside courtyard. The spatial location relationship of units is the verticillate and alternate relationship like tree leaves, spreading on a rising plane, seen in Fig. 7.

Family structure in villages vary greatly with core family structure in cities. In city, the core family structure includes a couple and an unmarried child. But village family has evolved into a three-generation extended family, that is, the parents, live together with a married child and grandchildren (Wang, 2010). For the needs of supporting parents or family unity, another married child can stay with their parents by living in adjacent house site. It means in villages, a “family inhabit” that reaches comfortable degree must have two and above stretches of house sites. If it permits, the relatives within a big family can be neighbors to each other, which has received wide acceptance.

“Vertical enclosed house with outside courtyard” adapts to this characteristics. Each floor has two living units and each living unit is corresponding to one residence in a stretch of house site. One floor can meet the needs of one big family inhabit. If it combines upper and lower floor, the needs of a big clan composed of many parallel big families can be satisfied.

MULYI-FUNCTION “OUTSIDE COURTYARD” AND “OUTSIDE VERANDA”

As shown in Fig. 8, each living unit in “vertical enclosed house with outside courtyard” is divided into dynamic and static area that are



Fig. 2: Residential space model



Fig. 3: Two-storey residence plan



Fig. 4: Three-storey residence plan (odd floor)



Fig. 5: Four-storey residence plan (even floor)

staggered at half a floor. It is composed of three bedrooms, two living rooms and three toilets, one living balcony and one multi-function space (can be used as study room, small living room, etc.) In addition, there is a two-storey outside courtyard that fully meets the needs of three generation people living together.

The two-storey outside courtyard provides a courtyard space for living. Village residences with dense population in South China, has little relation with nature, though far from being called as concrete forest, still becomes a concrete airtight building. The residence, not only has narrow field of vision but also lacks of green landscape. Living under such space, people will “be far

from nature though being in nature”. The courtyard space can enlarge green vision of villagers and provide interpersonal space. In addition, the two-storey outside courtyard can plant small trees.

Outside veranda surrounding the dwelling is a linkage among outside courtyards at different heights, realizing contact of each unit to the outside and providing a wide activity scope for people. Also, it acts as

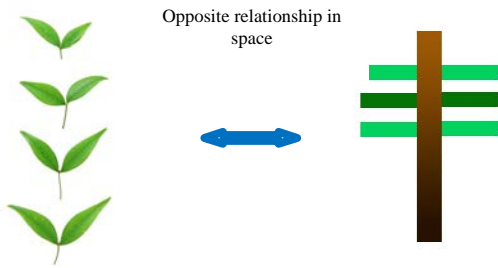


Fig. 6: Opposite relationship of traditional dwelling space like tree leaves

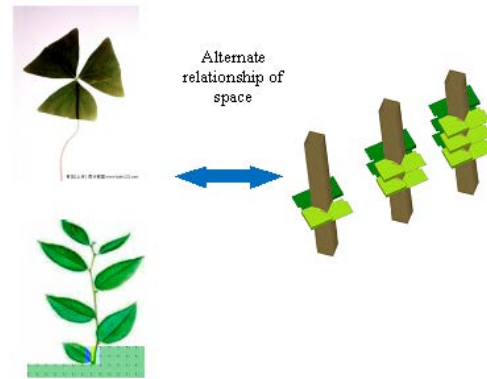


Fig. 7: Verticillate and alternate relationship of “vertical enclosed house with outside courtyard” like tree leaves

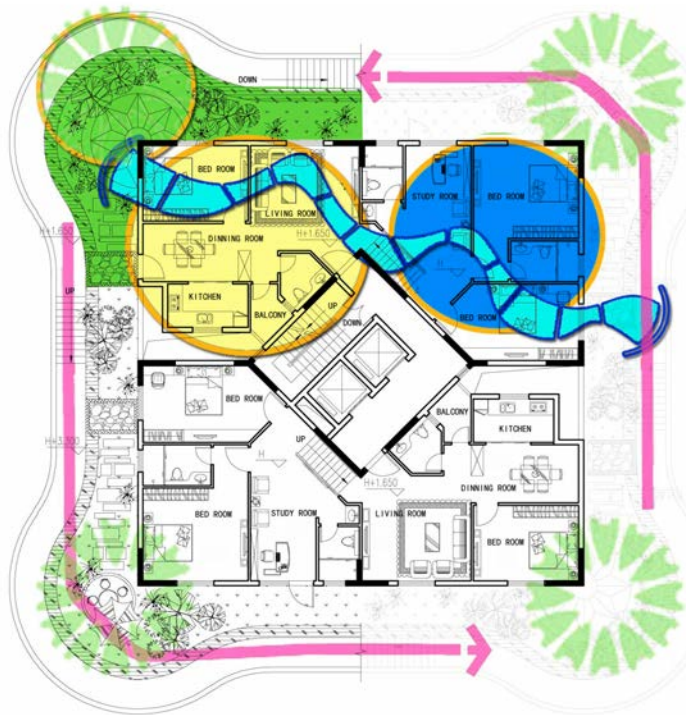


Fig. 8: Environment quality analysis of “vertical enclosed house with outside courtyard” residential unit

evacuation channel. Compared with closed and narrow channel in city buildings, outside evacuation channel can assist the senior and children who have disadvantageous physical quality and strength to escape from disaster from the back door in case emergency occurs.

CONCLUSION

George Basalla explains the cultural characteristics of residential building in his *Evolution of Technology* that “The needs of humankind in biological meaning can not explain the diverse existences of humankind. An ideal explanation as to why humankind infuses so much ideas and efforts to design and create new stuff is that they create it to define and pursue a particular living method and create their ideal living environment. Any new stuff coming out, must set its root on the existing culture, which accumulates many technological improvements and integrates more emotion, intelligence and needs of

humankind and becomes a part of existing civilization George (2000). This cultural psychological characteristics of villagers decide their pursuit to the dwellings. In the process of modernization, this cultural characteristics exclusive to Chinese villages can be protected only by protecting such pursuit. The design of “vertical enclosed house with outside courtyard” is a bold exploration to meet the pursuit of “family inhabit”.

REFERENCES

- George, B., 2000. *Evolution of Technology*. Fudan University Press, Shanghai, China.
- Wang, X., 2010. Study on changes of rural family structures during urbanization. *Econ. Special Admin. Zone*, 10: 172-173.
- Wang, Y. and B. Yu, 2013. Small-town planning evaluation system base on local culture mental. *Planner*, 6: 91-94.