Perceived Control and Liveability:

Environment and behaviour interaction in two urban villages of Shenzhen

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ABSTRACT: Urban village is a very special type of neighbourhood, created in the fast urbanisation process in Chinese cities like Shenzhen in the past three decades, playing an essential role in accommodating migrant groups, including rural-urban migrant workers and the young professionals. Built by the villagers whose farmland was transformed into urban use, these high-density informal settlements have become places where the daily life of the migrant groups happens. Nowadays, along with the processes of fast urban development and upgrading of industries, urban villages located in the central urban districts are being considered as problematic neighbourhoods that need to be reconstructed. The current model is still based on large-scale redevelopment, replacing the urban villages with new urban functions. In response to such radical approach, this paper will present an alternative argument of maintaining and improving urban villages as arrival cities for migrant groups. It is based on an environmental-behaviour study in the framework of liveability. This study is based on the theory that perceived control over the built environment is an important condition for liveability (Altman 1975, Van Dorst 2011). It indicates the changing life styles inside the urban villages, as well as the way space is socially produced in two urban villages in Shenzhen: Hubei and Baishizhou.

Key words: Urban village, migrant groups, liveability, Shenzhen

1   Introduction

One of the main characteristics of China's fast urbanisation in recent years is the huge amount of migrants moving from rural to urban areas, as surplus labours from the country side seeking for better paid jobs in cities. Such large number of migrants contributed greatly to the economic development of cities in labour intensive and service industries, while at the same time, they also generated huge demand for low-rent housing. In many cities that are receiving such migrants, especially big cities in South China like Guangzhou and Shenzhen, urban villages have played essential roles in accommodating this special social group. This is mainly because that they are not included in the official welfare system as the local residents, and therefore no social housing policies take into account the housing demand of migrants (Sato, 2006; Solinger, 1999). Besides, the young graduates, as starters in cities also tend to live in urban villages before they could afford better accommodations. Different to the rural-urban migrants, the young professionals have more potential in career development, and getting into the official welfare system. Therefore they usually consider the urban villages as a choice for the transitional period before settling down.

Interestingly enough, urban village itself is also a very special urban form created in the fast urbanisation process in China. As cities expanded, farmland was transformed into urban use, and the original housing plots of the former villagers became villages inside the urban areas. During this process,

the villagers lost their agricultural identity and became citizens. Recognizing the huge demand for low-rent housing from the migrant groups and entitled to the use right of their housing plots, the former villagers actively undertook housing reconstruction and renovation inside the urban villages, most of which are low-cost high-density apartment buildings for rent, attracting a large number of migrant groups to live there. Due to the complex land and housing ownership inside the urban villages, the government control in planning, construction and maintenance of the built environment is quite limited in these neighbourhoods (Liu, et al., 2010). Without planning regulations and public intervention, spontaneous development based on individual land ownership and led by informal housing market played major role in shaping the urban villages, characterised by extremely high density of housing, a shortage of public facilities and lacking of public space. However, the urban villages are considered as vital places with perceived liveability of the migrant groups, in terms of the dynamics of socio-spatial interaction as its central quality. Undertaken mainly by the former villagers, physical environment of the urban villages is constantly changed to meet the demands of the migrant groups, while at the same time, life style of the migrant groups is also largely defined by the living conditions provided in these neighbourhoods. Although the spatial layout of the urban villages is usually monotonous, following a 10m x10m grid pattern of the housing plots, a series of public spaces with different levels of privacy zones are often created by village collectives themselves or individual families, by allocating shops or building walls along the streets and alleys. This could be considered as people's control over their living environment, such as interaction with the social environment and the possibility of intervening in the physical environment, and giving meaning to it.

The paper will focus on the physical environment and correlated social activities inside the urban villages, as well as the way living environment within urban villages is socially produced. It starts with general introduction on the formation of urban villages and their common characteristics on urban morphology. This is followed by literature-based definitions on liveability and perceived control, in terms of the appreciation of individuals for their built environment that depends upon personal needs and socio-cultural contexts. Such theoretical analysis will result in indicators for sustainable liveability, which are mainly related to the basic needs of residents, their socio-cultural background, daily interaction with the urban environment and social interaction in it. These indictors will be reflected in the empirical study of two urban villages inside the special economic zone of Shenzhen, namely Hubei and Baishizhou.

2   Urban villages in China: their formation and morphology

2.1 Formation

As indicated above, the formation of urban villages in Chinese cities is the spatial consequence of land requisition during fast urbanisation process. China has a dual land tenure system with the urban land owned by the state and the rural land owned by the rural collectives. As for the rural land, it includes farmland, homestead, and land for construction. Land requisition for farmland is much easier comparing to the homestead and land for construction, considering compensation and social consequence. Therefore, in many cases, the rapid urban expansion was made possible by only requisitioning the farmland (Liu, et al., 2010), with the spatial consequence of village enclaves inside the newly built urban areas. In this case, farmland is converted into urban land, owned by the state, while the urban villages remain their rural collective ownership (Zhang et al., 2003). However, Shenzhen has followed a slightly different path. The urban villages started to form in 1980s in Shenzhen, and largely developed in 1990s in a similar way as the

other cities. In the year 2004, Shenzhen city municipality changed the household registration of all the rural population into urban population at once. Because of such change, these people could benefit from the social welfare system, which was not possible when they were registered as rural population. Ever since then, literally the urbanisation rate of Shenzhen became 100%. One of the externalities of this social transformation is that the original land of the urban villages owned by the former village collectives automatically became urban land without further compensation. However, this is only a change on paper work. Without further policy support, the social status, educational background and life style of the former villagers, as well as the role of the village collectives in managing urban villages remained the same. Instead of planting crops, the former villagers now rely on the rent of their self-built houses as the main family income. This has resulted in the spatial form of urban villages in Shenzhen, with extremely high density of low-cost housing. The traditional form of the rural villages has been largely transformed (Figure 1). The original homestead and land for construction owned by the rural collectives are now owned by the state. The rural collectives remain as joint stock companies and play a major role in managing urban villages. However, instead of having the land ownership, the current village collectives only have the land use rights for 70 years (Yan and Liu, 2013). In summary, the collective economy has changed from agricultural production to a land and housing rental economy. The urban villages not only remained the strong collective economy, but also inherited the village-style of self-organization, without the intervention and regulation of the state. However, lacking support from the public sectors, the self-organized management in the urban village is not very efficient in providing public facilities and maintaining public spaces. Altogether, the physical environment inside most of the urban villages seems problematic: infrastructure systems are poorly constructed; waste management is lacking; public space is not well maintained. These have led to an unhealthy and unsafe living environment (Liu, et al., 2010).
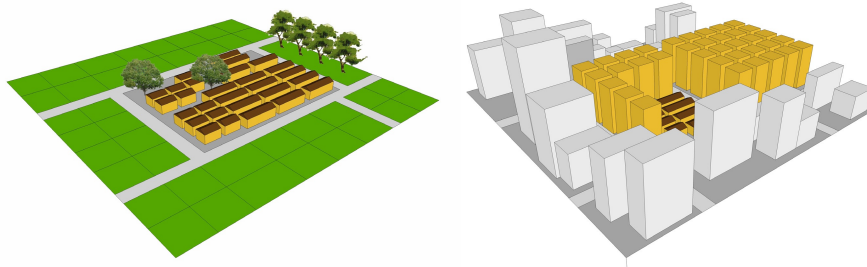

Figure 1: The formation process of urban villages in Shenzhen. Source: Zhang, F., 2013: P.24, P.25

2.2 Morphology

The life style inside the urban villages are not related to agriculture any more, while the village like living environment and socio-culture tradition still remain to a large extent, therefore the spatial forms and functions there have great contrast with the surrounding urban areas (Yan et al., 2004). The spatial planning of the urban villages is neither an official one nor initiated by the villagers from bottom up. It is mainly based on the 10m x 10m homestead that each family gets when the old villages are replaced by new constructions. Stimulated by rental income, most of the families try to make the most out of their homestead, by maximizing the floor area ratio on the plot, which resulted in densely built apartment forests up to 7 or 8 floors, without much space left for infrastructure and public spaces. Except for the main roads, the small alleys between buildings are usually very narrow, around 1m~2m wide. Assessing with the official planning regulations and building standards, most of these self-built apartment buildings are considered as illegal constructions by the city government. However, public intervention is very weak in

these semi-urbanized enclaves. These self-built apartment buildings are mostly for rent, and only the former villagers themselves occupy a small portion. Therefore, comparing to the huge numbers of migrants, the proportion of the indigenous villagers inside the village is very low (Yan et al., 2004). Living in urban villages is a preferred and in most cases the only affordable choice for the low-income migrants (Du and Li, 2010).

Besides housing, there are also other types of urban functions inside the urban villages. The ground floors of the buildings along main streets and some of the inner alleys are used for groceries, snack bars, and daily services like hairdressing, massage, dental clinics, etc. Although, as mentioned above, the physical conditions inside the urban villages are problematic, they are still functioning as mixed-use neighbourhoods where the daily life of the migrant groups could be accommodated.

2.3 The "arrival city"

The formation of urban villages is a crucial feature of urbanism in today's Chinese cities. These enclaves inside the modern cities become places accommodating the increasing number of migrants moved from rural to urban areas in search of better lives (Guo and Zhang, 2006), as well as the young professionals who just started their lives in cities. These could be seen as semi-urbanized neighborhoods for migrant groups to be gradually integrated into urban society (Liu, et al., 2010). By the end of 2005, Shenzhen has 320 urban villages sorted as administrative villages, 91 of which are located in the Special Economic Zone (SEZ) (Table 1), with a total population of 5.02 million, among which only 358,000 are former villagers. 90% of the land occupied by urban villages, around 85.5 km² in total, is outside the SEZ; while inside the SEZ, urban villages cover only 8 km² of land. However, as those urban villages inside the SEZ are significantly denser, they provide about 20% of the total floor space of urban villages in Shenzhen (Hao, 2012). Furthermore, due to the central locations of the urban villages inside the SEZ, the migrant groups prefer to live in these neighbourhoods as their first choice.

In 2005, the Shenzhen Urban Planning Bureau made an Urban Village Redevelopment Plan for the period of 2005-2010. According to the Outlines of this plan, the main goals were: to demolish 20% of the urban villages inside the SEZ and 5% outside the SEZ; to improve environmental safety: including the fire safety system, sewage and sanitary system; to improve the infrastructure system; to improve the public facilities such as schools and hospitals; and to improve the quality of open spaces.

Table 1: Urban villages in Shenzhen. Source: Shenzhen Planning Bureau

Districts	Number of Villages	Land Area (ha)	Average storey	Coverage ratio	Floor area ratio
SEZ	91	800	5.00	0.53	2.67
Luohu	35	236	5.20	0.53	2.75
Futian	15	196	6.20	0.55	3.42
Nanshan	29	291	4.60	0.54	2.47
Yantian	12	78	2.90	0.45	1.30
Non-SEZ	229	8549	3.00	0.33	0.99
Baoan	138	4428	2.90	0.33	0.97
Longgang	91	4121	3.00	0.33	1.00
Total	320	9349	3.20	0.35	1.13

This implies radical changes to the urban villages, especially those located in the central urban areas. What would be the social consequences of such redevelopment plan? Will the low-income migrant groups have to leave because of the improved living conditions and increased living cost? The recent urban regeneration practices in Shenzhen have shown the tendency of replacing the urban villages with large-scale new development. For instance, construction of the high-rise building Kingkey 100 was based on demolition of part of the Caiwuwei village, which has been considered as a model for redeveloping urban villages in Shenzhen (Figure 2). Saunders (2010) in his book named neighbourhoods that are similar to urban villages as arrival cities, or in other words, functioning integration machine, where the post-agriculture population could get integrated into the city life. Replacing such urban tissues simply with new development will lead to the process of gentrification, and the low-income migrant groups might lose their settlements. Nevertheless, although there is increasing consensus on the necessity of maintaining urban villages as affordable neighbourhoods for the migrants, there is no sufficient approaches to measure and improve liveability of these enclaves. Saunders (2010) emphasized that we need to devote far more attention to these places, especially its physical form: "… the direct access to the streets from buildings, the proximity to schools, health centres and social services, the existence of a sufficiently high density of housing, the presence of parks and neutral public spaces, the ability to open a shop on the ground floor and add rooms to your dwelling." (Saunders, 2010: p.32). This implies the importance of understanding the morphology of these neighbourhoods. Moreover, defining indicators of liveability for urban villages is also essential, so as to generate planning and design guidelines for improving living environment in these problematic neighbourhoods. This could be achieved through morphological and human behaviour studies on these places.

3   Perceived control and Liveability

The match between people's needs and their living environment is a quality of liveability, which is defined as 'fit to live in'. Perceived liveability stands for people's perception to the human settlement. It could be measured by the extent to which the users appreciate their habitat, based upon their daily interaction with the physical and social environment (Gifford, 1997). There is another notion we need to mention- sustainable liveability- that emphasizes on basic needs of people, the same as sustainable development does (UN 1992, 2002), since these basic needs are durable, not only for the present but also for future generations. In this paper, we address these basic needs in relation to the physical environment, which include: 1) health and safety; 2) material prosperity; 3) social relationships; 4) control; 5) contact with the natural environment (Van Dorst, 2010). The importance of these needs is underpinned by theories on behaviour (Maslow 1970; Vroon 1990) and environment-behaviour relationships

Figure 2: Kingkey 100: redevelopment of the Caiwuwei village. Source: Zwart, 2013: P.7

(Gifford 1997; Bell et al., 2001), with empirical indicators from large-scale and longitudinal research. A primary source is the research on the liveability of nations or the Happiness index (Veenhoven, 1999).

Although working as universal indicators, these 5 aspects are mostly relevant to the discussion on the development of urban villages in China, especially when considering the improvement of the living conditions in these neighbourhoods, remaining their roles as 'arrival cities' for the low-income migrant groups. Such kind of transformation might be achieved by: 1) acknowledging the basic needs of such social groups, 2) matching these demands with planning and design proposals of renovating the physical environment, and 3) generating common interests among the government and former villagers, who would collaborate in financing such renovation projects.

Among these 5 indicators, the needs of material prosperity and social relationships are less related to space than the others; contact with the natural environment is a need that involves space of various scales, from building to neighborhood, city and even the regional levels; health and safety are accepted as leading themes for sustainable neighbourhoods in modern urbanism; control over the living environment, however, as a primary need for inhabitants has not been acknowledged, in terms of both physical and social environment. An anonymous living environment is usually undesirable because it is the setting for antisocial behaviour. An anonymous neighbourhood may function well, however, this is not desirable from the point of view of social sustainability, because it becomes totally depending on formal control. A better scenario is a neighbourhood where individuals have control over the amount of social interaction they might encounter. This freedom of choice (Zimbardo 1969) is the core of the privacy theory of Altman (1975): privacy is selective control of access to the self or to one's group. As indicated above, the morphology of urban villages has its pros and cons. One of the downsides of the physical form is the monotonous layout of the 10mx10m grid pattern based on the individual housing plots, which leads to undefined zones inside neighbourhoods that are lacking (informal) control. Thanks to the self-organized management model, the villagers tried to adapt their physical environment to diversified demands, by adding shops to the ground floor to form vital streets, or building walls and fences near entrances of their buildings, creating a legible set of zones that helps to control social interaction, to form better places for living. Having noticed such environmental behaviours, this paper will focus on the theme of control, for improving the urban villages towards sustainable arrival cities and liveable neighbourhoods for the migrant groups. The hypothesis is that people's control over their built environment could facilitate the control of the individuals over their social interaction, which will lead to increased liveability from people's perception.

4   Two urban villages in Shenzhen: Baishizhou and Hubei

4.1 The issue of social control

Since 2012, a group of teachers and students of the Delft University of Technology have been doing research on urban development in Shenzhen. Comparing to the big plans of the government aiming for economic restructuring in the city and regional levels, the focus of our research is more on social sustainability in the neighborhood scale. Two of the focus areas are urban villages inside the special economic zone: Baishizhou in Nanshan district and Hubei in Luohu district (Figure 3). As the first central urban district of Shenzhen developed since 1980s, Luohu is still functioning as the main urban center. Comparing to Luohu, Nanshan district is relatively young. Nevertheless, it has been developed very fast in recent years, and become a very promising new district with emerging centralities. Generally speaking, these two urban villages are both centrally located, and both are playing essential roles as arrival cities for

the migrant groups, because of their advantages of highly accessible by public transportation, close to employment, education, public services, culture and leisure functions of the city. Considering the differences, Hubei is a village with much longer history, and much smaller size than Baishizhou (Table 2).

As mentioned earlier, the densification of new urban villages is mainly through self-construction on the homestead of individual families. In the case of Baishizhou, this transformation process happened on the original site of the old village; while in Hubei new village, each family got 10mx10m plot in an adjacent area to the old village. Therefore when comparing the layout of the two villages, it seems that Baishizhou has a less rigid grid pattern than Hubei new village does. Although with such a slight difference in the layout of building plots, the morphology and building typology of the new villages in each case are quite similar, with maximized building height of 7~8 stories and narrowest alleys of 1~2 meters. Besides the very limited amount of main roads and squares, these narrow alleys have formed major part of the open spaces inside the urban villages (Figure 4). Since there is a shortage of open public spaces for the large amount of population in these neighborhoods, some of the narrow alleys between buildings have become space of local residents for their daily outdoor activities, including those that need to take place in areas with certain levels of privacy. Therefore, these alleys are not only for traffic anymore, but also used by local residents as living space for chatting, playing chess with neighbours, and doing housework, etc. In this case, passers-by are sharing the same space with the local people. This has led to a problem of lacking social control in the daily lives of the residents. The sense of belonging is hard to create under such spatial conditions (Figure 5). To improve the physical environment for better social control and sense of belonging, restructuring the road network is essential by adding more hierarchy to the system, in order to create privacy zones, within which various levels of privacy might be achieved. Such intervention could be combined with the goals of improving health and safety within the neighborhood, so as to meet more basic needs of people, and eventually create a more liveable living environment.

Figure 3: Locations of Baishizhou and Hubei in Shenzhen

Table 2: Basic data of Baishizhou and Hubei

	Baishizhou	**Hubei**
Location	Nanshan district	Luohu district
Area (Km²)	7.4	0.2
Population	140,000	18400
Percentage of migrants	90%	85%
Spatial layout	-New village built upon the homestead of the old village spontaneously, without the 10m x10m layout; -A small part of the old village remained, being dilapidated, without historical value	-Old village of more than 500 years history remained, with its ancestral temple, old gates and traditional village pattern. -New village built adjacent to the old village, with the 10m x 10m grid pattern

Figure 4: The spatial layout of Baishizhou. Drawing made by Jiping Peng

4.2 the coexistence of urban and rural lifestyles

One can notice that changes in the village lifestyle, or in other words, from rural to urban community, happen much slower than the spatial transformation of land use and building typologies in these urban villages. As we know, physical changes brought by urbanization were dramatic: farmland was transformed into urban use; the old villages of low-density and traditional form were densified and transformed into new villages. It seems very likely to happen that such radical changes in physical environment should have also caused dramatic changes in the lifestyles of the local residents, especially the former villagers. However, the social network and cultural foundation of the original villages are not disappearing so fast. Furthermore, the huge amount of migrants who came to live in the urban villages are largely from the rural areas. These people are also in a transitional stage, adapting themselves from rural to urban lives. The village-like social network based on kinship determines the social interaction patterns among people in urban villages, which are quite different comparing to the anonymous neighborhoods in cities, like the gated communities. For example, in Hubei village, the residents still keep the tradition of praying to their ancestors, based on which public spaces with culture identity have been formed in the old village (Figure 6). These kind of cultural spaces and activities form a rich and colorful community place with vitality. As long as such original place-based social and cultural relations remain, the urban village is still seen as a special

type of community in the city.

Another example is the informal markets inside the urban villages, which hold the rural identity of the place, and shape the environmental behavior of local residents, as well as the visitors (Figure 7, 8). As stated earlier, the urban villages are characterized by high density of low-rent housing, built by the former villagers and with the target group of the migrants. Due to the highly concentration of low-income population, there are also demands for low-end services in these neighborhoods, besides low-rent housing. Informal markets using the space of the main roads, squares and some of the small alleys are quite often seen in urban villages like Hubei, which has formed their identities because of such kind of activities. In the case of Hubei village, it is the seafood market, quite well known in the surrounding neighborhoods, attracted many visitors from outside. However, space used for these markets was not designed for such activities, and not supported by sufficient infrastructure like sewage system. Although the seafood market in Hubei village is very vital, with positive social interaction among people, the spatial conditions do not fulfill the other liveability indicators like health. We may conclude that the way public space is used here on the one hand reflects the life style of rural community; while on the other, it shows people's needs of adapting their physical environment. In short, the urban village provides an interim space where modern urban identity and traditional rural identity coexist (Liu et al., 2010). The idea is not to unify the lifestyles and facilitate changes. Instead, such diversified needs could be incorporated in the renovation of urban villages, so that the adaptation of the physical environment could sufficiently facilitate the social interaction of people, and maintain the culture identity of the place.

Figure 5: Activities in small alleys in Hubei. Photo taken by Fanying Zhang

Figure 6: People praying in Hubei village. Photo taken by Fanying Zhang
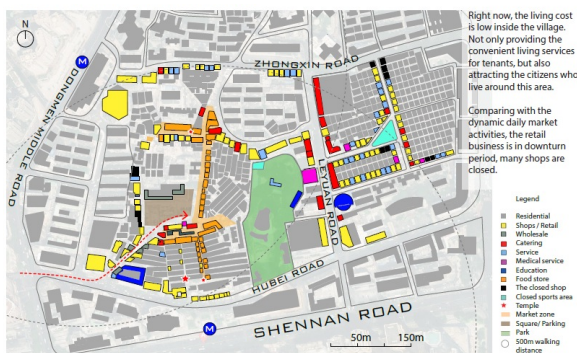

Figure 7: Programmes inside the Hubei villages. Source: Zhang, 2013: P.60

Figure 8: Informal markets in Hubei village. Photo taken by Fanying Zhang

5   Conclusions

The formation of urban villages is a crucial feature of urbanism in today's Chinese cities, along with the fast urbanization process. These enclaves in cities like Shenzhen are playing essential roles in accommodating the great amount of migrants, and at the same time, providing rent income for those landless former villagers. The physical environment of the urban villages has pros and cons. Without planning regulations and public intervention, spontaneous development has led to problems like extremely high density of housing, a shortage of public facilities and lacking of public space. Nevertheless, the urban villages are also considered as vital places, the arrival cities for migrants to be gradually integrated into urban society. Although there is increasing consensus on the necessity of maintaining the urban villages as affordable neighborhoods for the starters, there is no sufficient approaches to measure and improve liveability of these enclaves. Defining indicators of sustainable liveability for the urban villages is essential, so as to generate planning and design guidelines for improving living environment in these so called problematic neighborhoods. This could be achieved based on investigating basic needs of local residents, in combination with morphological and human behavior studies.

Control over the living environment as a primary need for inhabitants has not been acknowledged, in terms of both physical and social environment. Undertaken mainly by the local villagers, physical environment of the urban villages is constantly changed to meet the demands of the migrant groups, while at the same time, life style of the local residents is also largely defined by the living conditions provided in these neighborhoods. This could be considered as issues related to people's control over their living environment, such as interaction with the social environment and the possibility of intervening in the physical environment, and giving meaning to it. Learning from the two cases of Baishizhou and Hubei, there are issues of social control in urban villages, mainly related to lacking of open space and the necessity of creating privacy zones by restructuring the neighborhoods. From the point of view of lifestyles, the urban village provides an interim space where modern urban identity and traditional rural identity coexist, and generate demands for adapting the physical environment. This could be incorporated into the design proposals for renovation of the villages, so as to facilitate positive social interactions and enhancing cultural identities.

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