

# Building a Sustainable Community in Social Low-rent High-rise Housing: the Case of the Chongqing Model in China

**Xueni Peng and Jin Baek**

Ph.D candidate, Department of Architecture and Architectural Engineering, Seoul National University, Korea  
Associate Professor, Department of Architecture and Architectural Engineering, Seoul National University, Korea

<http://dx.doi.org/10.5659/AIKAR.2015.17.4.139>

**Abstract** In 2007, in the city of Chongqing, the city government announced a plan to meet the basic needs of its lower-to-middle class residents, namely those of providing a shelter and urban infrastructure. In one respect, the effort to attain such goals has achieved good quantitative results; however, a more critical examination reveals that little consideration has been given to analyzing the qualitative aspects of such a policy, namely the physical and emotional effects on tenants. The results of the research in this paper have implications on the need to focus on building a 'sustainable' and 'healthy' community, with the awareness that for people in low-rent areas, sociability and community spirit are more closely related to their neighborhood contentment. Although attention to scale and type of area-planning are both important, the immediate surroundings and services are often neglected, but as we shall show they are key considerations for residents in this new type of housing. While attempting to comprehend the role of community in the quality of a neighborhood, in this research, we attempt to document the physical appearance of the problem and explore its underlying causes in order to shed more light on residents' individual evaluations of quality in their local living conditions and include the affective dimensions of such perceptions.

*Keywords: The Chongqing Model, Low-rent Housing, Physical and Emotional Effects, Sustainable Community*

## 1. INTRODUCTION

The 'Chongqing model' concerns a series of social and economic policies implemented in the Chinese megalopolis of Chongqing in 2007 towards housing in particular migrant workers. This model involved a major social upheaval seeking to balance inequalities in society and especially those regarding accommodation. The Chinese term Lianzufang literally means 'low-rent housing', but it has also been translated as 'social rental housing', 'affordable-rent housing' (Zhu and Lee, 2010). This concept, which was also first proposed in China in 2009, has since become a model for other cities to follow in the steps of Chongqing's 'brave exploration' and pioneering example. Over time, this model has been widely commended and, as stated, emulated by many other cities in China (Li and Driant, 2014).

To date, the Chongqing city government has accelerated its construction of low-rent housing for specific low income

classes, and an objective assessment conveys the idea that an increasing number of communities are already being affordably accommodated (People's Daily, February 2013). Although at the outset, the main hypotheses underlying this research are that the Chongqing model has contributed to the construction of more houses; its quantitative approach belies its qualitative aspects and even results in segregation through type of accommodation.

The first stage of the 'Chongqing model' program involves constructing more than 40 million m<sup>2</sup> of public housing over a ten-year period (2010-2020), with 30 million m<sup>2</sup> to be constructed in the first three years (Romain 2011; People's Daily, February 2013). These records create an optimistic impression of the scale and ambition of the program regarding the Chongqing housing projects. However, after making a first-hand investigation of low-rent housing in Chongqing, and the categorization of rooms in the new housing stock, the main challenge of this work is to examine the qualitative aspects to which Chongqing construction of low-rent housing is in not accord with or have fallen below what promised standards should be. This may be due to the fact that complacency has arisen from the success of a number of proceeding housing projects.

In the first section of the analysis presented in our research, we examine the considerations on a healthy and sustainable neighborhood design. We focused on the direct examination of two particular neighborhoods and included personal contact with some tenants and other on-site observations. The second part of the analysis examines the quality of low-rent housing based on our survey data from the two biggest social housing complexes in Chongqing city. This analysis goes from the community experience

Corresponding Author: Jin Baek  
Department of Architecture and Architectural Engineering,  
Seoul National University, Seoul, Korea  
e-mail: jub34@snu.ac.kr

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

between tenants, to the annoyance of surrounding environment. Both residents' intrusions and perceptions are generally discussed. These elements are used to give the full image on the quality of the housing units and of the neighborhoods.

The Chongqing low-rent housing cases present an opportunity to investigate and debate the psychological and social characteristics of the design of buildings or of sustainable public spaces together with their successes and failures. In an attempt to give a more precise meaning to the term 'success and failure' we have set the main objective to analyze the indicators in order to measure the phenomenon of quality of built low-rent housing units in Chongqing city. Related to this point, we include in our analysis several simple questions: what are the qualitative results at a 'visible' level on the general appearance, climatic-responsive conditions of the neighborhood? Is the housing satisfaction closely associated with the 'invisible' level on perceptions of friendliness, community spirit, a sense of collectivity (belonging) among neighborhoods? In this paper we conclude that the quantitative approach of Chongqing low-rent housing cases has disregarded its qualitative role in shaping the 'visible and invisible' outcomes.

## 2. THE CONSIDERATIONS ON SUSTAINABLE NEIGHBORHOOD DESIGN

As to whether a question concerning community gratification is expected to be a correct conductor to what respondents actually experience their neighborhood. In the present study, there are two dimensions for supporting a sustainable neighborhood: housing and neighborhood comfort. For example, paraphrasing Shumaker and Taylor (1983), a healthy neighborhood contains elements of a system including: cognition of satisfaction and expectations of stability, feelings of positive affect, greater knowledge of the locale, in return, tenants could serve to sustain or enrich the given location. Studies in Alison et al., (2002) put emphasis on residents' satisfaction weighing heavier on the occupants' perception of neighborhood ('friendly people,' 'warm place to live,' 'pleasant' and 'intimate community,' to use as a measure of the overall quality of a neighborhood rather than objective neighborhood conditions. This may assist scholars understanding what is meant by quality and what is vital to an integrated study of a sustainable neighborhood is the extent residents endeavor to contribute to their social lives. Most studies completed have focused their range of analysis on the neighborhood or community environment.

An architectural study also tries to investigate new relationships between the concepts of private and collective space as a means to develop new approaches to the idea of a community. Danish architect Gehl J (1987) pronounces a close correspondence between the level of communication and the quantifying degree of spatial sustainability. As indicated by Hall E T, a cultural anthropologist, in his book: *The Hidden Dimension* (1966), he reveals the use of the physical atmosphere in the organization and encouragement of social collaboration (interaction).

Habraken (1998) suggested a healthy neighborhood is where intimate and unceasing interaction between people and the forms they reside in distinctively delineates them from their constructed environment. Correspondingly, other sociologists commonly use the term, 'private' and 'community' from a combined social and spatial perspective to address the reason for people's choice of

activities (Georjeanna et al., 1996; Mark T, 2001). Also, it is believed that secluded houses are often unable to support a sustainable and healthy community, reflected in the foreign cases of Jacobs (1961)—low-rent projects that become poorer hubs of negligence, wreckage and general social desperateness.

In truth, low-rent housing and its development was viewed as a program of one dimension—merely as a conglomeration of construction and private spaces, instead it has various degrees of connectivity in which private and public spaces are interwoven. Several scholars (Chavis and Wandersman, 1990; Bay J, 2004) concluded that even though limiting intrusion and family privacy are prized in the arrangement of neighborhood planning, correspondingly and from a more sustainable perspective, sharing in collective life binds people inside the house together and builds a neighboring environment on which we all depend and trust is more highly valued."

The above quoted research findings on evaluating housing conditions in qualitative terms mainly regard people's own assessments of community quality. Especially they point to the fact that satisfaction with housing is closely connected with tenants' satisfaction with their neighborhood. In setting forth these theory contexts, the main question that guides our study is therefore: have the two typical low-rent housing projects in Chongqing in fact contributed to visible and intangible comfort in the community? Or more plainly: can the Chongqing model become a reliable example to be followed in China?


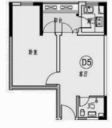



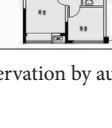
## 3. APPLYING 'COMFORT' TO WEIGH THE QUALITY OF NEIGHBORHOOD LIFE—CASES OF HIGH-RISE, LOW-RENT HOUSING IN CHONGQING

There are uncertainties as to whether an inquiry on neighborhood comfort is a correct measure of what respondents really experience in their neighborhood. In an effort to give a more detailed sense to the term 'comfort' and indicate how spatial characteristics, area-type and subjective neighborhood attributes influence neighborhood comfort using selected information drawn from a questionnaire survey of migrant tenants who live in the two biggest low-rent neighborhoods of Chongqing.

We expected to discover more about two chief aspects. First, which qualities of the neighborhood environment give the impression being connected with house comfort? Secondly, what environmental attribute has actually produced a negative effect on neighborly comfort and overall community satisfaction? The subsequent case represents a 'typical-type' in low-rent housing patterns and aims at summarizing the theoretical background argued earlier in this paper. The case study focuses on the compounds of estates built through the Chongqing governmental subsidized accommodation program 'Lianzu fang'. The fact is that the general intention of the new housing projects is for them to be collective structures, and to create an economic, low-rent tenement community housing the 'urban poor'.

Due to the strong need to provide low-rent dwellings for residents, the government has planned and developed its residential community with clear functions, including underground car parking and landscaped gardens. Although construction, maintenance, and the facilities of the housing are intended to be those of a low-cost tenement, what distinguishes both programs is a minimum provision of comfort.

Table 1. Housing pattern illustration in Kangju xicheng (m<sup>2</sup>)

Housing pattern	Percentage	Characteristics		Illustration	Spatial configuration (Availability of privacy/community)
		Area			
1LK	52%	Area	30.49 m <sup>2</sup>		Indoor: the boundaries between private and public space are inter-transitional; Outdoor: no semi-open space between the internal private space and the external public space
		ventilation	no window/window opposite corridor in the restroom		
1LKD	18%	Area	55.46 m <sup>2</sup>		Indoor: balanced distribution in dividing the communal living space and private space; Outdoor: the balcony obtains an extended margin between the indoor and the outdoor space
		ventilation	no window/window opposite corridor in the restroom		
		Area	51.53 m <sup>2</sup>		Indoor: space dividing in the left and right principle; Outdoor: the location of the balcony makes it inconvenient to use
2LKD	23%	Area	59.98 m <sup>2</sup>		Indoor: the juxtaposition of a family room between the living rooms ensures an appropriate filter between public and private spheres ; Outdoor: the only route connecting the family to outside is the balcony, but the location of the balcony greatly discounts its communal function
		ventilation	no window/window opposite corridor in the restroom; family room without direct sunlight		
3LKD	7%	Area	59.16 m <sup>2</sup>		
		ventilation	Sunlight is absent from the family room		
3LKD	7%	Area	74.45 m <sup>2</sup>		
		ventilation	Sunlight is absent from one room		

Analysis is based on filed observation by authors.

*The visible comfort level*

Architects and urban planners refer to visible comfort as having a significant role in housing preference and, the positive evaluation of dwellings by users. Up to now, in low-rent housing in China, the simplified modern combinations of living-dining or living-dining-family type have been the main patterns, where each tenant can own ‘a piece of belonging’ and ‘a home’ in the host city.

One feature noticed by some observers, was that the planners didn’t give much thought to supplying furniture and electrical appliances. The rental rooms must be furnished by the dwellers themselves according to their respective demands. When residents move in, they are supposed to buy the necessary furniture and living requisites. The typical rental house contains a cabinet (kitchen), gas stove and a wash stand (bathroom). The implication of these rental conditions is that the house is a makeshift home.

Further interest in the visible comfort focuses on the ventilation system. As we see in Table 1, which we drew up based on field observation of Kangju xicheng community; it may provide detailed description of the insufficient design on spatial configuration. And the designer makes the point that the organization of ventilation in the home is poorly designed due to its use of the lowest standards set down for design. Although the low-rent houses are all equipped with a balcony which is quite elaborate, and a formal hall space with a full-length window to give an open and airy feeling, designers emphasized the importance of convenience, and space-dividing

in the house planning, so they agreed to a minimal form with less emphasis on ventilation. The residents complained about the house-planner’s failure to find effective and economical methods for inner air circulation in the homes.

*The invisible comfort level*

‘Invisible comfort’ is challenging to describe and housing has been widely recognized as a key element of livability and one of the important factors in human satisfaction and comfort. The entity of comfort is a judgment of the house itself, while the senses and sense of belonging to a neighborhood are reliant on the concept of subtle comforts.

Clearly, an initial effort is required to relate the purpose of low-rent housing to the supply of temporary residences for low-income and moderate-income individuals and households. Upon closer examination, there are one or two common features in a simple arrangement—one is the portrayal of the boundary of the main door and path, the other is the relationship between each house. The first concept is clear: one, the sphere of privacy, a screen keeping dwellers from the onslaught of public demands and intrusion; second, the life that occurs between each house, with respect to seeing and hearing contacts (Gehl, 1996).

*Public spaces—the door, the path and ground garden*

According to the present residents of two neighborhoods, the organizations and institutions that constitute the neighborhood are deemed acceptable, although the original architectural layout generally omitted close relations to the neighborhood community. In the majority of the present low-rent housing units, a path similar to other community facilities is referred to as being convenient because it functions merely as a means of conveyance in a highly generalized way. The corridor does not represent living spaces closely related to the social customs of salutation and receiving guests, it is just an element of access or environmental control. To a certain degree the sense of community is also related to the dynamic activities/contacts borne out of the housing planning—the city as a mechanism for sustaining human contact as Alexander stated (1967).

What is equally remarkable about the housing considerations given to the social planning itself is that they have been pushed into the background. Character is lacking and the façade is represented by hard materials such as concrete, nonporous brick. Being fully-enclosed by erected walls, with a long corridor on each layer of the building means there are deficiencies in natural light, ventilation and semi-private space. Four elements were designated for investigation according to the succeeding extra principles [Table 2]:

These elements of living habitats present different spaces that need to be improved. In summary it can be said that the design of the details plays an important role with regard to human interaction and experiencing the outside world (Hall, 1966). In this way, residents’ interaction involves various consultations to make the connection between the physical arrangement, intensity and distance of sensory effects.

In order to find a practical solution to contribute to tenants inclusion with their neighbors, it doesn’t matter whether the groups have gatherings or not, but there is little freedom or equal occasion to select where individuals and groups desire to live—a lack of choice and exclusion concerns the tenants. While the economic

Table 2. Classification of passive/negative issues of Chongqing low-rental housing projects (to promote or prevent visual and auditory contact)

Inhabiting Isolation	Encouraging Contact	On-site Observation
Walls	Less/No walls	Impenetrable walls are erected to give rigid impression of the facades. Residents hurry, going and coming
Long distance	Suitable distance	When the 33-story complex lacks a semi-public space within the vertical level, residents limit their social contact to the ground garden. Distance is slightly excessive or not suitable, occasional conversations cannot get started or residents even give up social lives
High speed	Low speed	Ground garden is the only place that permits social lives. Residents like to slow their steps to observe people's activities
Varying degrees of public access	One degree of public access	The two projects don't supply residents with varying degrees of contact intensity. This single function doesn't meet people's requirement of multiple contacts
Back to back orientation	Face-to-face orientation	

design sacrifices voluntarily more communication, and in turn conveys less reliability and responsibility. For the residents, it is not enjoyable to stay and chat with their neighbors in the corridor, even though it should be emphasized, that neighbors in low-rent residences are not closely knit due to mutually unstable dwelling situations.

The two cases do not incorporate a ground garden for entertainment activities or more participation and engagement in more emotional exchanges among neighbors. In the long run, the core value is that which could cultivate neighborly trust and show mutual respect and this is also low. Actually, inhabitants in outside deprived (less well-off) regions are more sensitive to aloofness and delinquency. In meeting personal demands for a private, peaceful, and secure neighborhood, we fault the two cases for concentrating on the physical characteristics of lodging and ignoring the social, cultural and psychological influences that contribute to vitality (or dullness).

Both projects are focused entirely on high-rises. The basic composition of the site is concrete building shells with a simple landscaped-garden. On general observation, we saw a series of vacant concrete paths flanked on both sides by columns of 33-story apartment buildings. A high percentage of residents interviewed expressed their belief that the low-cost settlements were built specifically for poor tenants; they didn't expect much from the interior design or the environmental planning.

For local tenants, to have their own house is a special privilege and family privacy is mistakenly taken as a synonym for anonymity and a means to be segregated from anyone other than a select group of friends and family. And, relaxation time provides satisfaction and creates a more tolerant attitude to the growing crowded housing situation. [Fig. 1] shows how the entrance path to each high rise is through the ground garden. In this neighborhood, the ground level is the favorite place to rest and entertain among residents. The first floor of such buildings is planned with a commercial program in mind which provides facilities with respect to entertainment and convenient living. In interviews, the ground garden functions as both residents' main path and communication. Those surveyed chose the words 'tolerable' and 'necessary' to describe both the spatial construction and the community (refer to the survey of community experience). The level of social relationship between tenants in neighboring buildings, providing appropriate climatic-responsive conditions, and having a sense of collectivity (belonging

and community spirit among neighborhoods, all these areas in which residents expect less than satisfaction provide us scope for our research.

*Community experience*

The survey conducted by the authors provided more penetrating feedback towards houses from their neighbors, and towards the low, socially-emotional relations in the given spaces. Table 3 explores the main thrust of the discussion above concerning the low-rent housing's private, mutual character. In the eyes of the majority of tenants, the two public rental projects have offered little to foster communal interaction so far as to provide nourishing circumstances for the growth and improvement of family life and, particularly, of the whole community.

According to our interviewed tenants, results showed that most of them experienced social mobility, with travel to recent improved accommodation from a shantytown to a low-rent neighborhood; however, the situation still denies them the intimate comfort of a long-existing community. Most of them point out that the 'old neighborhood' where everyone knew each other's business has disappeared here. 'Knowing nobody, having no acquaintance' establishes resounding proof for the link between a poor experience of community and the low-frequency use of the neighborhood. Medium or low satisfaction may reflect their concern about the neighborhood environment. It may be due to individuals are expected more on depending on the outside environment resource (Park, 1952), particularly migrants might need support network through neighborhood to better adapt to the new environment. In fact, among the tenants surveyed, both the perception of neighborhood quality and neighborly relations are assessed as significantly low, but neighborhood safety and maintaining privacy reach the majority's expectations. This is partly due to the designers' wish to shelter them with as much privacy as possible to adapt to their unfamiliar environment. Therefore, despite people in the two low-rent housing areas living a decent life; they consider the community they inhabit to be a moderately secluded one.

Amongst the four scopes of sense of collectivity observed, the feedback disclosed that tenants generally looked forward to having more of a social life; yet, they were somewhat less prepared to participate in this due to the unsuitable conditions.

Pertaining to community contributions, surveyed tenants showed an interest in communal life, but showed that there was a lack of opportunity to enter into this. In the 'intimacy perception' column in Table 3, evaluation of their neighborly contact and their suggestions for inspiring conversation were given. In comparison, tenants' subjective requirements for self-involvement in neighborly affairs weigh more than the architects' evaluation. In conclusion, the majority of the residents' need for community spirit is clearly underestimated.

Sociologists found evidence suggesting that as neighborhood units take their places within the community, from a society of acquaintances to the unfamiliar environment, they become acquaintances again. This transformation has led to a hardening of the social gap and recommendations to organize residents for the sake of mutual voluntary help to demonstrate cooperation, respect and concern for others among neighbors. A harmonious community can be cultivated better by neighborly interaction.

Table 3. Responses from residents viewing the sense of collectivity in Kangju xicheng and Mingxin jiayuan community.

	Responses from users on aspects of social spaces	Percentage of residents (mean)	Suggestions
Neighborhood quality	Ground garden provides facility for entertainment	Positive (58 %)	More seats, more playgrounds for children and seniors specifically
	Hygiene and sanitation	Negative (53 %)	More trash bins, organization of night restaurants
	Evaluation of the interior layout (well-lit, good-ventilation, sufficient access to nature, security, noise)	Positive (76 %)	More consideration given to illumination and ventilation for toilets in natural ways
Intimacy perception	Sufficient chance for residents to enjoy a communal life	Negative (51 %)	More open and participative practices can become an intermediary to encouraging the gathering of people in common areas
	Easy to get to know neighbors of the same and different layers	Negative (68 %)	Many forms of public collective housing should be functionally produced
	Residents feel free to use the shared and public spaces	Positive (73 %)	Design shared areas with more diverse leisure functions
Community involvement	Feeling a strong sense of belonging	Negative (53 %)	To strengthen mutual trust, respect
	Feeling comfortable in the tenant neighborhood	Positive (59 %)	More intimate, approachable outdoor space allowing neighbors' communication
	Neighborhood communication (mutual assistance, reliance)	Negative (72 %)	More shared, semi-private and public spaces to allow meeting and socializing in this neighborhood
	Contribution to communal activities	Positive (51 %)	Combine or closely group all community facilities in one place
Community Facilities	Public transportation facilities (means, routes, adequacy and expense)	Positive (55 %)	Build a subway system to connect domiciles and facilities
	Amount and character of employment within walking distance and within a reasonable travel radius	Positive (61 %)	
	Annoyances (proximity to railroads, high-speed traffic highways, power stations, industrial plants, airports, etc.)	Agreement (89 %)	A wider choice in site selection is needed to avoid unpleasant and dangerous surroundings

\* In the survey we asked respondents to tell us about their attitude toward the sense of collectivity in terms of like/dislike choices. While analyzing the results, we categorized answers of LIKE as POSITIVE attitudes and DISLIKE as NEGATIVE attitudes.

Table 4. Attitude to Annoyances.

Annoyances						
High frequency of transferring when commuting	Uncomfortable access to normal places of employment, business centers, medical treatment etc.	Unpleasant immediate surroundings	Uneconomical in terms of traffic costs (time and money)	The presence of high-speed roads and airport	Close to electricity pylons	Proximity to manufacturing plants producing noise, smoke, odor and dust

Although there are always some residents who value complete privacy and perhaps have antipathy toward exchanging reduced privacy for frequent social acquaintances, would architects and planners seek any improvements in encouraging direct and open neighborly communication? How can sustainable considerations combine with ethical responsibility, and in a concrete space re-establish the essential connection between surroundings and human activity, and in turn later unite individuals with each other? Would an inclination be bred where people are more approachable, companionable and less anonymous? If the above ideas are practical, what are the boundaries of the private exposure people generally accept to strangers in terms of a space plan?

### Annoyances

One key phenomenon is at the back of the process of low-rent housing—physical marginalization—starting from early spatial location along the suburbs of the city, gradually, moving to the more and more isolated margins of the city. Numerous and consistent societal influences have exacerbated the loss of a meaningful collective life (Giulani V and Feldman R, 1993). This reveals itself in the hidden chain of worsening social surroundings and the few life chances in the shady districts of the low-rent housing projects: the people who get the opportunity to enjoy the social housing are actually being marginalized physically (Loïc Wacquant, 2008).

The surveyed tenants were previously more pleased with their traditional lives, and at present they feel lonelier and more socially isolated. This could be due, in part, to the low-income population depending more on public resources. Predictably, the conditions of the low-rent housing lag behind those of other communities by a great margin. Table 4 offers evidence of tenants' attitude to annoyances in their recent living situation.

As for functional quality and, whether the public environment invites or repels it, a high proportion of tenants expressed the view that site density (site coverage) constrains their degree of physical and emotional comfort. With respect to the hazardous conditions and enduring nuisances of the site and environment, 'noise, radiation, and exhaust fumes' are defined as the principal nuisance items, and these are most likely produced by airports, commuter traffic routes, industrial processing plants, or biochemical plants. Most of these hard-to-measure effects or hidden obstacles to residents' wellbeing are facilities and resources necessary to the life of a community and, however well managed, they will still create undesirable if not harmful conditions. The chronic absence of these fundamental services is usually exacerbated by the fact that low-rent houses are located in the marginalized area, and have duty preference items.

In the selection of projects, even though it merits a completely separate research of its own accord, the issues of the hidden chain of worries must be tackled clearly. Low-cost housing gradually creates an impression of tenants that are physically marginalized—situated at the very bottom/edge of the hierarchical social ladder (Friedmann and Wolff, 1982; Fan C, 2002; Davis M, 1992; Setha M, 2011). This may culminate in conflict, chaos and disorder which would serve as a lesson and an instructive precedent for low-rent housing in Chongqing city or even over the whole of China.

In the analysis above, to some extent, the majority of governmental-subsidized rental housing stock is more inclined to be located in vulnerable areas. Paradoxically, the negative effects on the results of the site examination on residential satisfaction can be connected to the advantages of these sites. For the present situation, 'low-cost' is equal to 'planned shrinkage' of daily services, especially the relocation of stock is a forced choice. Unfortunately at present, this is the very nature of low-cost housing programs. A small percentage (17-23%) of tenants reported that they felt inconvenienced by transportation or too much time-consuming commuting. A small percentage suggested that they felt uncomfortable with access to normal places due to the lack of developed public facilities, medical treatment development, etc. As a result, the 'hard-to-measure' effects of hidden hazards on a neighborhood are important to residents and of great concern.

#### 4. SUMMARY OF FINDINGS: FROM BOTH AN ENVIRONMENTAL AND SOCIAL PERSPECTIVE

Therefore, the main goal are proved that the type and spatial distribution of this social low-rent housing stock evidence negative housing and community effects that probably convey on some difficulties both for inhabitants and to the future of the social housing. Looking at the estates tenants' experience through questionnaires, the negative feedback is shown. First, by focusing on visible comfort, we examine the residents' experience, the problems they have to go through consist of interior crowding condition, limited facilities and services, and ventilation inside the housing. Second, our findings also underline the need to problematize the notion of an invisible comfort. From public spaces, community interactions, annoyances, the interviewees distrust their neighbors and believe they live in makeshift housing instead of a home with emotional support. The low-levels of self-esteem in solving key aspects of shelter present themselves in most of the interviews as yet another signal of what some writers desirable as what—in the words of Turner (1976: 51)—‘a housing does to the people’.

We also have evidence of the likely effects on social outcomes, and the findings that both the proximity of housing complexes to existing urban areas and, social interaction and community spirit are closely connected with contentment in low-rent neighborhoods. Also, the sustainability of the neighborhood can be assessed best as we have recorded in this paper through observations of interference, area-planning, supply of facilities and the rate of crime which by necessity limits construction in two clear ways: locality (the cheapest land is far from the city limits) and quality of destination (tenement blocks are built with minimal consideration for residents' affective needs).

Our analysis of two low-rent housing projects in China has directed the planning trend towards weakening considerations in terms of these hybrid spaces. In regard to the merits and drawbacks of the collective planning of housing, major participants have also pointed out that designers fail to offer places for meeting and socializing in this neighboring community. The controversial point we raised is whether to create a vigorous, public-spirited atmosphere that makes the community stronger, instead of a cloistered existence with little interaction with anyone except friends and family. As reflected in the survey, residents desire a more collective community, instead of being isolated from each other.

Also, there is a geographically bigger disparity between commercial housing and low-rent (affordable) housing. ‘low-rent housing’ by definition has gradually come to mean ‘cheap-equipped space’, and ‘people living with dignity’ has turned out to be a Chinese pipe-dream as well. If this trend were to continue, it seems that in less than a generation such affordable housing could become much less desirable. Even though the issue of housing quality remains unresolved, we must be clear also about what we mean by ‘affordability’, ‘privacy’ and ‘community’ when considering how to make comfortable low-rent housing and to develop a blueprint for the future trends of public design.

#### 5. CONCLUSION

Our idea of low-rent housing is widely based on economic and private-sheltered life aspects. It makes sense because social rental housing is intended to address the housing-adequacy problems of a wide variety of lower to middle-class communities. The study above demonstrates a comfort/convenience is also another primary consideration.

For Jan Gehl (1987), reciprocal relationship between buildings place an emphasis on public dominion and on the ground, and the places and facilities of residents who stop or involve in numerous social activities at various configuration, all these aspects together contribute to an atmosphere where dwellings will definitely function warmly/space rich with emotions instead of functioning as machines (house cages). In other words, as the social life for tenants to perceive positively, so do assist their adaptation that how different individuals (families) live together with harmony.

Another deep concern weights our attention in the two housing projects is both space types and design elements have an effect on residents' healthy social environment. Similar to the engineering methods used for housing design, spatial component such as categorized as ‘seating, scenic, circular, active and inactive space’, these spatial arrangement elements provide a range of possible qualitative points for presenting corresponding designs.

Often research into the physical and social needs of tenants and planning for their practical communal activities in these projects are lacking. Instead groups of more engineering-minded designers tend to emphasize more the mechanical and the social-cultural dimensions, then finally decide on a specific practice in making a residential building. Consequently, the practical functions of an individual tenant are highly promoted as key aspects of improving social interaction to make dwellers' lives worth living there, however without a community perspective all efforts are in vain.

Community, variety, harmony and connectivity are essential for neighborhoods' sustainability and the setting makes such values show through the physical catalyst though peoples' performance and lifestyles can boost or annoy ecological sustainability endeavors.

Moreover, researchers have been recognizing the necessity of value of multidisciplinary research works when the physical environment does not work greatly on harmonious community. There shows a requirement for more multidisciplinary sides with applicable technical approaches (such as physical or social science, or economics, etc) to advice the present green systems towards more holistic approaches.

#### REFERENCES

- Adams R.E. (1992) ‘Is happiness a home in the suburbs? The influence of urban versus suburban neighborhoods on psychological health’, *Journal of Community Psychology*, 353–372.
- Alison P, Ade K and Rowland A. (2002) ‘What Makes People Dissatisfied with their Neighborhoods?’ *Urban Studies*, 39(13), 2413–2438.
- Aravena, A and Iacobelli, A. (2013) *Elemental: Incremental Housing and Participatory Design Manual* (Hatje Cantz; Box Blg edition).

- Ahlbrandt, R. (1975). *Neighborhood Revitalization: Theory and Practice* (Lexington Books).
- Allport, G. (1955). *Basic Consideration for a Psychology of Personality* (New haven: Yale university press).
- Alexander, C. (1996) *The City as a Mechanism for Sustaining Human Contact* (Center for Planning and Development Research, University of California)
- Banerjee, T and Baer, W. (1984) *Beyond the Neighborhood Unit: Residential Environments and Public Policy*, (Plenum Press, New York).
- Bay, J. (2004). 'Sustainable community and environment in tropical Singapore high-rise housing: the case of Bedok Court condominium', *Environmental Design* 18(3/4) 1984.
- Berck, P and Williams, L. (1980). *The Neighborhood Organization: an Empirical Examination of Psychosocial Support*. Unpublished manuscript (Indiana/Purdue University, Indianapolis)
- Berger, P and Neuhaus, R. (1977) *To Empower People: the Role of Mediating Structures in Public Policy* (Washington: American Enterprise Institute)
- Brodber, E. (2012). 'History and Social Death', *Caribbean Quarterly* 58(4), 111-115.
- Camagni R, Capello R, Nijkamp P, 'Towards Sustainable City Policy: An Economy-environment Technology Nexus', *Ecological Economics* (24 1998) 103-118
- Chavis, D and Wandersman, A. (1990), 'Sense of community in an urban environment: a catalyst for participation and community development', *American Journal of Community Psychology* 18(1), 55-81.
- Davis, M. (1992). 'Fortress Los Angeles: the militarization of urban space. In *Variations on a Theme Park: The New American City and the End of Public Space*', (ed) Sorkin M (Noonday Press, New York), 154-180.
- Dinze, F. (2013). 'Locked In, Locked Out: Gated Communities in a Puerto Rican City' (University of Pennsylvania Press, USA)
- Dreier, P, Mollenkopf, J and Swanstrom, T. (2001) 'Place Matters, Metropolitcs for the 21st Century'. (Lawrence, KS: University Press of Kansas).
- Erin, M. (2012). Does Design Affect Behavior? A case study of Pomona and Sontag Halls, In partial fulfillment of a Bachelor of Arts Degree in Environmental Analysis, 2011-12 academic year, (Pomona College, Claremont, California).
- Erving, G. (1963). *behavior in public places: notes on the social organization of gatherings*, (New York: The Free Press).
- Fan, C. (2002). 'The elite, the natives, and the outsiders: migration and labor market segmentation in urban china', *Annals of the Association of American Geographers* 92(1), 103-124.
- Friedmann, J and Wolff, G. (1982). 'World City formation: an agenda for research and action', *International Journal of Urban and Regional Research* 6(3), 309-344.
- Gehl, J. (1996). 'Life between Buildings', Trans. Jo Koch. (Van Nostrand Reinhold, New York).
- Georjeanna, W and Mark, B. (1996). 'Overall "Sense of Community" in a Suburban Region: The Effects of Localism, Privacy, and Urbanization', *Environment and Behavior* 28(27), 27-43.
- Giulani, V and Feldman, R. (1993), 'Place Attachment in a Development and Cultural Context', *Journal of Environment and Psychology* 13, 267-274.
- Habraken, N. J. (1998). 'The Structure of the Ordinary: Form and Control in the Built Environment', (Cambridge: MIT Press).
- Hall E, T. (1996) 'The Hidden Dimension', (New York: Doubleday).
- Harm, D, B. (2010). Section of "power and the city" in the book: 'The power of place: geography, destiny, and globalization's rough landscape', (Oxford University Press, USA), 185.
- Hanson, J and Hillier, B. (1987). 'The Architecture of Community: Some New Proposals on the Spatial Consequences of Architectural and Planning Decisions', *Arch & Comport', Architecture and Behavior* 3(3), 251-273.
- Iris, Y. (1990). 'Justice and the Politics of difference', (Princeton University Press), 233.
- Jacobs, J. (1961). 'The Death and Life of Great American Cities', (New York: Random House).
- Karina, L. (2003). 'Sustainable 'urban village' concept: mandate, matrix or myth' Conference on management for Sustainable Building, Pretoria, 26-30.
- Li, M, Y and Driant, J, C. (2014). 'Affordable housing policies in urban China' in the book of 'Affordable Housing in the Urban Global South Seeking Sustainable Solutions' edited by Jan B, Paul V L, Peer S (Routledge, Taylor & Francis Group, 212.
- Loic, W. (2008). 'Urban Outcasts, A Comparative Sociology Of Advanced Marginality', (Polity Press, Cambridge CB2 1UR, UK)
- Li, S, M and Song, Y, L. (2009). Redevelopment, displacement, housing conditions, and residential satisfaction: a study of Shanghai. *Environment & Planning*, 41(5), 1090-1108.
- Mark, T. (2001). 'Does Privacy Undermine Community?', *The Journal of Value Inquiry*, (35), 517-534.
- Marmot, A. (2002) 'Architectural determinism. Does design change behavior?' *British Journal of General Practice*, 52(476), 252-253.
- (MOHURD), Ministry of Housing and urban-rural development of China, (2009), the vice-minister said low-rent (affordable) housing must be built up with increasing number in major cities of China to accommodate the poor group.
- Park, R. (1952). 'Human communities', Glencoe, Ill.: Hillcrest Press'
- Peter, B, et al., (1984). 'Sun, Wind, and Comfort A Study of Open Spaces and Sidewalks in Four Downtown Areas', (Berkeley: University of California Press), 61-62.
- People's Daily, 'Chongqing to launch 10 million square meters of public housing' (2013) <<http://english.peopledaily.com.cn/90001/90776/90882/7289910.html>>
- Perry C. (1998) 'The Neighborhood Unit' (1929) (Reprinted Routledge/Thoemmes, London), 25-44.
- Peterson, R, D, Krivo, L, J and Harris, M, A. (2000). 'Disadvantage and neighborhood violent crime: Do local institutions matter?' *Journal of Research in Crime and Delinquency*, (37), 31-63.
- Romain, L. (2011). Chongqing: Model for a new economic and social policy? This section, prepared by the Asia Centre ([www.centreasia.org](http://www.centreasia.org)), draws mainly on the press in Chinese, aiming to reflect the point of view of the People's Republic of China on international questions and issues related to Greater China. China perspectives, Current affairs.
- Setha, M. (2011). 'The edge and the center: gated communities and the discourse of urban fear', *American Anthropologist* 103(1), 45-58.
- Shumaker, S and Taylor, R. (1983). 'Toward a clarification of people-place relationships: a model of attachment to place'. In N. R. Feimer & E. S. Geller (Eds), 'Environmental Psychology.

- Directions and perspectives,' (New York: Praeger), 233.
- Tatjana, S and Jeremy, T. (2006). 'Flexible housing: opportunities and limits,' *Architectural Research Quarterly*, 9(02), 157-166.
- Turner, J. (1976). 'Housing by People. Towards Autonomy in Buildings Environments.' Marion Boyars, London- New York. Reprinted 1991.
- Yang, X. (2009). 'Chongqing's housing policy: meeting the housing needs of the low-income families?' Master degree discussion paper, Department of Urban Planning and Design The University of Hong Kong.
- Zhu, Y. P and Lee, J (2010). 'The coming housing crisis of China,' *The Crisis of Welfare in East Asia*, 223-240.
- (Received May 24, 2015/Accepted October 27, 2015)