

The Policy of Social Housing in China

Guidelines for High Quality Social Housing Design



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Introduction

Chinese Government is planning to accelerate the urbanization process and meanwhile improve the living conditions in rural areas at a quicker pace. On the other hand, a vast gap between the rich and the poor in China. High quality social housing is very important for poor people. But there is no clear policy for social housing now.

In this paper, it is tried to pay more attention on this issue and give some proposal on it based on policy level and design guidelines.

1 Shelter

Facts and Data

China

China is located in the east of the Asian continent and on the western shore of the Pacific Ocean, has a land area of about 9.6 million sq km. The country is divided into provinces, autonomous regions and municipalities that are administrated directly under the Central Government; a province or an autonomous region is subdivided into autonomous prefectures, counties, autonomous counties and /or cities; a county or an autonomous county is subdivided into townships, ethnic

townships and/or towns. Municipalities directly under the Central Government and large cities are subdivided into districts and counties. The autonomous prefectures are subdivided into counties, autonomous counties and cities. Autonomous regions, autonomous prefectures and autonomous counties are all ethnic autonomous areas. The Constitution specifically empowers the state to establish special administrative regions when necessary. A special administrative region is a local administrative area directly under the Central Government. Today, China is divided into 23 provinces, 5 autonomous regions, 4 municipalities directly under the Central Government and 2 special administrative regions.

Demography and Health

China registers a population of 1,328,020,000 in 2008, amongst 51.5% are male, 48.5% female; 45.7% live in urban areas, 54.3% in rural areas; and 19% are 0-14 years old, 8.3% above 64.

The birth rate, death rate and natural growth rate of population are 13.71%, 7.03% and 0.655% respectively in 2008, while the life expectancy is 71.61 years for male and 75.52 years for female.

Sex ratio: at birth: 1.1 male(s)/female; under 15 years: 1.13 male(s)/female; 15-64 years: 1.06 male(s)/female; 65 years and over: 0.91 male(s)/female; total population: 1.06 male(s)/female (2009 est.)

Infant mortality: 20.25 deaths/1,000 live births; where male (18.87 deaths/1,000 live births) and female (21.77 deaths/1,000 live births).

Total fertility rate: 1.79 children born/woman (2009)

Economy

China reports a gross domestic product (GDP) of \$4.222 trillion in 2008, up 9.8% year on year. This growth was 13% in 2007 and 11.6% in 2006.

Table 1: Major Indicators on Social and Economic Development

SN	Indicator	Unit	2005	Average Annual Growth Rate (%) (1998-2005)
1	Average Household Size in Urban Areas	person	2.96	-0.9
2	Per Capita Gross Living Space in Cities	m ²	26.1	4.9

Data in this table is obtained from the 1% population Sample Survey in 2005.

The registered urban population has been seeing a slowdown growth, while the per capital living space has been experiencing a fast growth. However, in China, only residents who have been granted the urban residence permit can be statically accepted into the urban population. In addition, a rapid growth has been posted in the actual population living in urban areas.

Statistics of the consumption structure of urban residents in 2005 shows that 36.7% of their household income is spent on food, 10.1% on clothing, 10.2% on residence, and 43.0% on articles for daily use and others. In the Chinese statistical data, the housing consumption only covers the daily living-related expenses, such as rent, utilities and housing renovation, excluding the expenditure on housing purchase. The analysis of expenditure on housing purchase and per capita income is provided in the following sections.

The registered unemployment rate in urban areas is 4.2% (2008).

In 2008, the rural population working in urban areas reaches around 225,420,000, among which 85,010,000 (37.7%) work at locations nearby their hometowns, and 140,410,000 (62.3%) far from their hometowns. A report by McKinsey shows that, China's permanent population in urban areas is estimated to 1 billion by 2030. According to the current policy of urban residence permit, the rural population is allowed to work in urban areas, whereas not covered by the welfare policies applicable to the urban population. However, the Chinese government plans to address this challenge in the next 10 years, namely, a population of 1 billion will both work and live in urban areas by 2030.

Until December 31 in 2008, the outstanding amount of saving deposits in both urban and rural areas has reached \$3.257 trillion, up 25.7% year-on-year. In 2008, the annual disposable income of urban households is \$2320, up 8.4%, and meanwhile the per capita net income of rural residents is \$700, up 8.0%.

In 2008, a total population of 23,340,000 has been granted the minimum cost-of-living in urban areas, V.S. a total population of 42,910,000 (with a net income below \$176/year) in rural areas.

Gini index: 0.47, in 2008.

Urbanization: 40.5%, in 2004.

(The data above was from the Information Centre of the Construction Ministry of China.)

1.2 Shelter-Related Facts and Data

Access to Shelter

Table 2: Floor Space of Commercial Residential Buildings Constructed

Unit: 10 000 m²

SN	Item		2001	2002	2003	2004	2005	1997-2005
1	Residential Buildings	Floor Space	30533	34719	43854	47949	55185	283073
2		Growth Rate (%)		13.7	26.3	9.3	15.1	
3	#Villas, High-grade Apartments	Floor Space	1457	2278	2349	2976	2835	14766
4		Growth Rate (%)		56.4	3.1	26.7	-4.7	
5	#Economically Affordable Housing	Floor Space	5796	5280	5331	4257	3513	38648
6		Growth Rate (%)		-8.9	1.0	-20.1	-17.5	

Data in this table is extracted from the 1% Population Sample Survey in 2005.

Table 3: Floor Space of Commercial Residential Buildings Sold

Unit: 10,000 m²

SN	Item		2001	2002	2003	2004	2005	1997-2005
1	Residential Buildings	Floor Space	19939	23702	29779	33820	49588	205087
2		Growth Rate (%)		18.9	25.6	13.6	46.6	
3	#Villas, High-grade Apartments	Floor Space	878	1241	1450	2323	2818	10387
4		Growth Rate (%)		41.3	16.8	60.2	21.3	
5	#Economically Affordable Housing	Floor Space	4021	4004	4019	3262	3205	27850
6		Growth Rate (%)		-0.4	0.4	-18.8	-1.7	

Data in this table is extracted from the 1% Population Sample Survey in 2005.

According to China Statistical Yearbook (2006), the average number of rooms per household is 3.05, the floor space of housing per capita 28.69 m²/person, and the number of rooms per capita 0.97.

It can be concluded from the above data that, as China's economy is gaining strong momentum, the construction of commercial residential buildings has seen

steady rises, while that of social housing catering for the low-income population has not been any acceleration so far.

Table 4: Proportion of Household by Sources of Housing (2005)

Unit: %

SN	Item	National Total	Beijing
1	Self-built House	69.1	22.3
2	Purchasing Commercial Building	7.0	12.1
3	Purchasing Economically Affordable Housing	2.9	3.2
4	Purchasing Former Public-owned Building	8.8	27.5
5	Renting Public-owned Building	3.3	14.6
6	Renting Commercial Building	5.7	16.5
7	Others	3.4	3.7

Data in this table is extracted from the 1% Population Sample Survey in 2005. The sampling fraction is 1.325%.

The above table indicates that, the proportion of self-built houses in major cities is far lower than the average, mostly due to the fact that such source of housing is not allowed any more by the government. Given this, the urban population can only get their housing problems solved by access to the commercial building segment and the social housing system in the future.

Table 5: Structure of Residential Buildings (2000-2003)

SN	Seismic Fortification Intensity	Number of Stories	Masonry Structure	Frame and Frame-shear Wall Structure	Shear Wall Structure	Steel Structure	Other Structure
1		1-9	29%	42%	25%	4%	
2	8°	10 and above		44%	50%		6%
3		1-9	22%	60%	10%	2%	6%
4	7°	10 and above		29%	65%		6%
5		1-9	40%	55%			5%
6	6°	10 and above		33%	50%		17%
7		1-9	100%				
8	Non- Seismic	10 and above					

Data in this table is obtained from 90 cities. The number of cases is 517.

The construction cost of a 6-story building in masonry structure is \$210/m², V.S. \$320/m² for the frame structure and \$500/m² for the steel structure. Currently in China, prices for steel and concrete are much higher than masonry materials, which, plus the very low level of industrialization and the low wages of construction workers, has contributed to the above scenario.

Housing stock: In 2008, the floor space stock is 68,345,600 m²

Selling Price: \$588/m² in 2008.

Access to and cost of Utilities

The utilities are provided by the government, and the user pays according to consumption. The cost of water: \$0.8/tons. Each household needs to pay \$5/month. The cost of electricity: \$74/1000unit. Each household needs to pay \$10/month.

Access to and cost of Education

Take Beijing as an example.

Cost of kindergarten: \$130-150/month

The K9 education is financed by the government, and the households only need to pay \$20/year for the textbooks. Cost of high school education: \$150-200/month and cost of higher education: \$200-250/month

The above data is obtained from a survey conducted in the urban areas of Beijing.

1.3 Housing Policy

China has not published any legal documents which provide explicit guidelines on housing so far. Prior to 1999, the welfare housing allocation policy played a dominant role in China, according to which the dwellings of the urban population would be provided by the government. However, this policy was abolished in 1999. China introduced a clearly-defined housing supply system in 1999, under which the lowest-income households are covered by the low-rent housing system, the low- and middle-income households by the economically affordable housing system, and the high-income households by the commercial residential building system. The land engaged by residential housing remains the property of the government, while the owners hold the residential property and use the land on a

rental basis. Generally, the rental term lasts 70 years and the owners can continue to use the land by paying rents after the term expires. As for the social housing for rental, both the land and the property rights belong to the government, and the occupants only need to pay a relatively low cost. As for the social housing for sales, the land belongs to the government, while the occupants do not need to pay the cost of land use. The property rights in such cases are not clearly defined yet, but it's overwhelmingly predicted that the property rights will be definitely granted to the individuals. However, such properties would not be at the disposal of the occupants, instead, they could only be bought back by the government.

1.4 Actors in Shelter Delivery and Their Roles

Central Government

The central government develops policies on land use, residential building construction, sales and use, financing and taxes. Collection and disclosure of the related industry data nationwide is also within the responsibilities of the central government.

Local Government

The local governments introduce specific rules and guidelines pursuant to the applicable regulations and policies of the central government, and then take responsibility for their implementation. The local governments also play a key role in local urbanization.

NGOs

The NGOs, are well represented by China Real Estate Chamber of Commerce (CRECC), who come out with suggestions on policies and development for the government; delivering reports of policy implications based on the tracking, examination and study of the real estate market in collaboration with other research institutions, and boosting healthy development of the industry by organizing communications and exchanges between the real estate developers.

Research Institutions

China's research institutions are mostly collocated with universities and academic organizations. They are commissioned by the government or by NGOs, to conduct theoretical research and submit desired proposals for policy development. The research institutions also offer relevant education programs in colleges and universities based on the research results and demands of industry development so that the theoretical knowledge can be put into application in a timely and effective manner.

Real Estate Developers

The real estate developers are engaged in housing construction, sales and post-service following government policies.

Banks and Financial Institutions

Banks and financial institutions provide financial support to both the real estate developers and the estate purchasers.

1.5 Shelter Design

Prior to 1999, the Soviet Union's experience in housing design was highly valued in China. As a result, most similar designs were generated, where the floor area and the mere purpose to satisfy the residents' basic needs were highlighted and other aspects were underscored.

Since 1999, the residents' needs have been further highlighted in the housing design, which are embodied in the following aspects:

- The residential planning, starting with site selection, should be consistent with the urban planning. Meanwhile, the planning of the residential communities should be in harmony with the design of the city streets so that the community functions are complementary to the urban functions.
- The graphic design of housing needs to take the occupants' functional needs into consideration to cater for different demographic groups' living habits. The graphic design should be versatile and practicable.
- A combination of factors such as aesthetics, energy saving and indoor lights need to be taken into consideration in the design of the enclosure system.

- In aspect of outdoor landscape design, the natural, aesthetic and practical elements as well as other functional requirements need to be highlighted, including the harmony between the gardens within the communities and the urban landscape.
- The equipment systems need to be designed as systematic, comprehensive, environment-friendly and energy-efficient to improve the occupants' comfort and meanwhile reduce the living cost.

2 Organisation

The Ideal World Group, a real estate developer that was founded in 1996 and currently has some 1,000 employees, provides complete housing up to 1,000,000 square meters (m²). The Group has been delivering elaborately-decorated properties and conducting research in housing design and development policies in collaboration with the research institution.

We are looking forward to the opportunities to play a key part in both building social housing, and creating the technical standards. As a real estate developer, we will be actively engaged in the construction of high-quality social housing for the low-income population.

3 Challenges

There is a vast gap between the rich and the poor in China. Over the past three decades during which China has been maintaining a strong economic momentum, the toughest challenge lies in the vast gap between the rich and the poor.

There is a vast gap between the major cities and the small ones in China. The major cities in China including Beijing and Shanghai have already reached the same level as the well-developed cities in terms of both scale and appearance. However, most small cities in China are still registering slow growth and thus low income of residents. Particularly, such public facilities as hospitals and schools are undersupplied there as well.

There is an also vast gap between the urban areas and the rural ones. The rural population has poor living conditions. Even small cities undergoing slow growth

post much better conditions than rural areas where the current situation is pretty worrisome. From perspectives of public service or industrial development, rural areas need to take a frog leap. The residents who work and live in rural communities can only receive very low income and are therefore stuck in poor living conditions.

There is a big rural population wants to live in large cities. As a result of the vast gaps mentioned above, the rural residents are very eager to work and live in large cities, which drives the large cities to further develop into super big ones. Young people also prefer large cities to small ones. Even the residents in small cities, particularly the youth, are also willing to live and work in big cities. The properties are sold at extremely high prices. Take Beijing as an example. A commercial property providing a floor area of 80 square meters costs around \$200,000, equivalent to the aggregate income of an individual for more than 20 years– an extremely striking ratio.

Due to lack of reasonable perspectives on living, people always prefer big-size properties. Most residents want to live in big-size homes and thus deem the size as the most important factor when selecting a property. However, China's land is not sufficient to supply so many urban residential properties.

People have not put environmental protection and energy conservation on their top agenda yet, and meanwhile the use cost is too high.

Standards for social housing design are not available yet. Meanwhile, there exists a near-sighted thinking that quantity takes precedence to quality and sustainability in the design. This will result in a large number of poor-quality properties, which may become new slums in the future and thus compromise the living quality of the residents there as well as the social harmony.

4 Possible Solutions

SWOT analysis

Strengths	Weaknesses
China is maintaining a strong momentum, registering a rapidly growing per capita income.	Undersupplied land in China A vast gap between the rich and the poor in China. A great rural population wants to live in large cities. There is no clear policy for social housing
Opportunities	Threats
The Government is planning to accelerate the urbanization process and meanwhile improve the living conditions in rural areas at a quicker pace. China starts to learn from its counterparts. These guidelines have been successfully in countries such as Japan and Sweden.	The global financial crisis. The sharply-rising construction cost The poor-quality social housing may result in new slums.

One may concluded from the above analysis that China must, building upon the current strengths and opportunities, take effective measures and initiatives to speed up the urbanization process, and meanwhile focus on addressing the living challenges of the low-income population, particularly housing. Only by doing this, can much more social problems that results from the vast disparity between the rich and the poor, be effectively addressed.

Regarding aspect of policies and investment, the social housing in China now falls into two categories: one for sales and the other one for rental. The government will focus on investment in construction of the category for rental, while the category for sales, also known as economically affordable housing, will be funded by social investment. From 2009 to 2012, the government plans to invest \$13 billion to build six million social housing units, which will help solve the housing problem of 20 million residents.

Banks should strengthen their financial support for the low- and middle-income population in purchase of properties by providing more favorable loan interest rates.

The government needs to strengthen its supervision to guarantee that the social housings are only available to low-income residents. The government needs to focus on improving the living conditions of the rural population.

The urban planning should be effectively developed to narrow the vast gap between cities. More investments should be channelized improve basic public services and inter-city transportations.

The design codes of social housing need to be developed to ensure the comfort of the buildings and meanwhile prevent them from becoming new slums. The social housing should maintain relatively high quality and keep harmony with the commercial buildings.

The following principles or guidelines need to be followed in the planning and design of high-quality social housing. I think these should be useful to designer.

- Reasonable location as well as convenient transportation and complete public facilities including hospitals and schools.

The reasonable site selection and public transportation construction can help reduce the transport costs of the low-income population, and the provision of improved public facilities will allow the residents to participate in social activities and enjoy convenient services, which can lead to a harmonious society rather than special living area and even slums.

- Social community planning is necessary. Such factors as safety, public area, fitness, neighborhood and human-vehicle relationship should be conscious taken into consideration when planning the residential communities for the low-income population.

These factors should include:

- Number of stories: The 6-storey structure is recommended due to the low cost and comfortable sense of dimensions.
- Community building density: It is recommended that the ratio between the construction area and the engaged land area is kept below 2:1.
- Lighting and ventilation: The lighting and ventilation should be conscious considered in the design, to reduce the subsequent energy consumption to lower costs.

- Parking and vehicle access: The provisioning of a few car parks can be considered, but the vehicle access needs to be reasonably designed, to guarantee the safety of pedestrians.
 - Bicycle parking facilities: In the community planning, the bicycle parking issue needs to be consciously considered. Adequate parking facilities should be planned.
 - Fitness facilities: Different types of fitness facilities, particularly those suitable for the elderly, should be fully planned so that all the residents can do exercise in their communities.
 - Recreational facilities for children: A wealth of recreational facilities for children should be planned so that the children can have a colorful life.
 - Barrier-free design: Barrier-free transportation and rest facilities shall be designed for the sake of the elderly.
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- Landscaping: Reasonable landscaping can help improve the life quality in a community. However, the subsequent maintenance cost also needs to be considered in the design. The utilities, including water, electricity, natural gas, internet connection, heating, need to be fully considered in the planning. The actual use needs of the low-income population should be fully considered in the residential building design:
 - Structure: The masonry structure should be selected considering safe and costs of the construction.
 - Building insulation: The insulation performance of a building needs to be considered in the design, to save energy consumption and reduce the use costs.
 - Elevator: Elevators need to be planned, to facilitate the lives of different types of residents.
 - Area: 40-50 m² with one bedroom, 60-70 m² with two bedrooms, and 80-90 m² with three bedrooms;
 - Decoration completed, standardized decoration/finishing can reduce the engineering cost, avoid dismantling and wastes, to result of the subsequent

decoration, and improve the living quality of the low-income population. The decoration/finishing materials selected should be energy-efficient environmental-friendly and durable.

- Kitchen: 6-8 square meters, equipped with kitchen furniture, natural gas pipelines and water inflow/outflow pipes. The spaces for household appliances and storage are reserved.
- Toilet: 3-4 square meters, equipped with toilet, a washing and water inflow/outflow pipelines. The storage space is reserved;
- Bathroom (shower): 2 square meters. It can be collocated with the toilet and needs to be equipped with a shower faucet and water inflow/outflow pipes.
- Living room: 10-12 square meters, equipped with TV, telephone and network connections.
- Restaurant: 3-4 square meters. The restaurant, large enough to accommodate a four-seat table, can be collocated with the living room.
- Bedroom: 8-10 square meters, provisioned with telephone and Internet connections.
- Storage space: 4-5 square meters, either standalone or collocated with living/bed rooms.
- Balcony: 2-3 square meters. The space for washing machine is reserved. The balcony needs to be equipped with water inflow/outflow pipes and clothes-drying facilities. Heating and cooling equipments need to be provided, depending on local climate.
- Energy-efficient systems such as the solar-energy heater should be considered if possible.
- The post-service of communities should be fully considered as well in the design. Community service, as a very professional service in China, includes security, cleaning, landscape, public facilities and household maintenance. In addition, allocation of necessary office space to the service team and provisioning of convenient equipment support to the maintenance service should be fully considered in building planning and design.

The above sections provide some considerations in social housing design. Based on those, a series of case studies have been completed and the research results have been submitted to the government agencies to help address the housing challenge of the low- and middle-income population to some extent.

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