

# A sustainable regulatory framework for affordable provision of public rental housing in China<sup>①</sup>

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**Abstract:** China has committed to provide 36 million units of affordable housing by 2015, reaching 20% of the total households in cities and towns. This massive supply plan is at the cost of considerable financial, natural and environmental resources. This paper is aimed to suggest a more sustainable and affordable regulatory framework of provision. The main methodology employed is the regulatory framework review, including a desktop review of the existing norms, regulations and standards of public rental housing in Shanghai, 300 questionnaire survey of tenants, and interviews with four developers. The barriers that have limited the efficiency of provision have been diagnosed, followed by suggestions to provide more units with less cost (both financially and environmentally) and cheap price.

**Keywords:** Affordable, Public Rental Housing, Sustainable

## 1 Introduction

*In the 12<sup>th</sup> Five Year Plan (2011-2015), the State Council committed to provide 36 million units of affordable housing nationally (10 million for 2011, 10 million for 2012, and 16 million between 2013 and 2015), covering 20 percent of total households, mainly in urban areas<sup>②</sup>. The target of reaching 20 percent of the urban population is also stated in the latest National Human Rights Actions Plan (2012-2015) (announced by the State Council in June 2012<sup>[1]</sup>). In this respect, China has established housing as a key indicator of social, economic and environmental development. Given the substantial scale of this program, the importance of ensuring an appropriate regulatory framework cannot be exaggerated. Since 2009, the focus of housing policy has shifted from 'Cheap Rental Housing' to 'Public Rental Housing'<sup>③</sup>. According to a speech by Mr. Xinwei Jiang (the Minister of Housing and Urban-Rural Development) at the 5th meeting of the 11th National People's Congress, from the 13th FYP, the main supply method will change from affordable housing in kind into subsidy in cash. Many cities, including Guangzhou province, Jiangxi Province and the city of Zhengzhou, have gradually terminated the EAH programme and replaced it with PRH<sup>[2, 3]</sup>. At present, the PRH program is the only affordable housing program for which non-*hukou* holders can apply. However, it is reported that the occupancy rate is less than 40 percent (2,000 households in 5,100 units) in the first two PRH projects in Shanghai, 23 per cent for the PRH in Wuhan and less than half units the in Zhengzhou have even attracted applications<sup>[4]</sup>.*

## 2 Methodology

*International experience demonstrates that as planning standards and regulations, together with administrative procedures, significantly influence the cost of housing production, they need to be carefully and regularly reviewed, to ensure they are appropriate to housing needs and demand. This chapter adapts a well-tested methodology<sup>[5]</sup> for reviewing regulatory frameworks for housing production and applies it to the Chinese context in order to assess the extent to which current standards, regulations and procedures*

<sup>①</sup> This paper is based on the draft of Chang, Y and Payne, G (2013) Chapter 3 Regulatory Review of Public Rental Housing, in *Promoting Affordable Housing in Changning District, Shanghai—a search for innovation*, The World Bank, Washington DC.

<sup>②</sup> Affordable housing mainly targets low-income households in cities and towns, but also includes the renewal of shanty towns of some forest, reclamation, coal mining areas, and the housing projects for nomadic population.

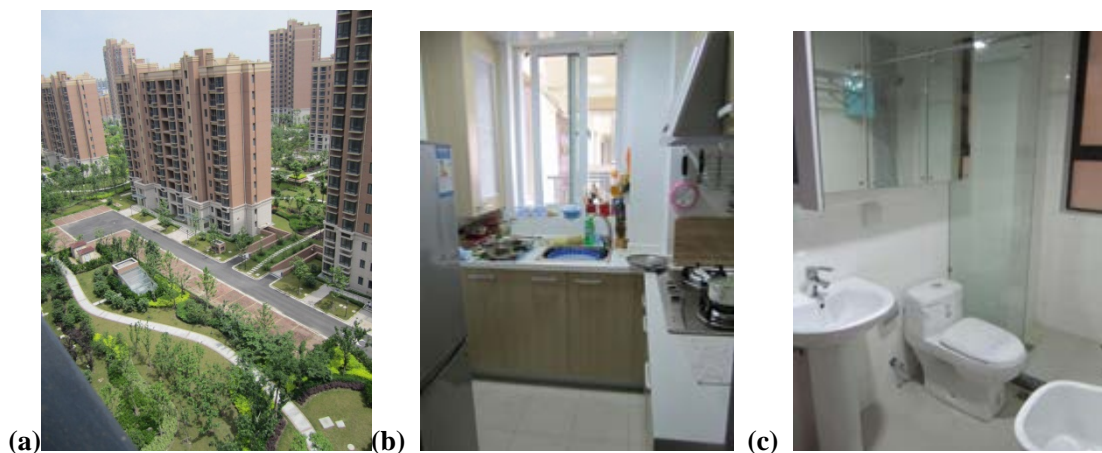
<sup>③</sup> Increasing home ownership levels stimulated a property boom and prompted the government to launch a massive affordable housing program, in the Twelfth Five Year Plan, of which PRH is a key focus.

facilitate, or constrain, access to appropriate forms of housing for those in need. The research was based on a desk review of existing norms, regulations and standards, as well as 300 questionnaire of tenants in one district of downtown of Shanghai, where is a popular destination of migrants, interviews with four developers.

### 3 The Regulatory Framework for PRH in Shanghai

*One feature that distinguishes the PRH program in China from the common understanding of public rental housing worldwide is that although talented households are granted significant subsidies, rental rates for other households are only slightly lower than the market price<sup>[6]</sup>. Another unique feature of PRH in Shanghai is it does not have an income limit from the early stage of policy making. According to national guidelines, the public rental housing program targets: firstly, those who do not own a home, or whose per capita living area is less than the standard specified by the local municipality; secondly, households whose total income and capital assets are less than the standard (specified by the local municipality)<sup>[7]</sup>; and thirdly, those without a local hukou, but who have had stable employment for a certain number of years (the number is determined the local government), including ‘ordinary’ and ‘elite’ talented households.*

*The main principles for PRH in Shanghai<sup>[8]</sup> are that it is ‘residential-use, consumption-driven, commodity housing-standard’, or in other words, market priced dwellings of a similar standard to commodity housing, though of a smaller than average size. These principles have determined that public rental housing in Shanghai is at the same standard as commodity housing, except that units are of a smaller average size. Households in PRH enjoy the same standard of landscape, building quality and neighborhood design as commodity housing, though some attributes, such as in-wall storage space, noise prevention measures and closed balconies are absent from dwellings in converted buildings.*



**Figure 1 PRH units provided by Shanghai Municipality**

(a): the neighborhood and open space, (b): kitchen, (c): toilet Source: photo taken by Ying Chang (2012),

*Guidance for the construction of affordable housing in Shanghai covers road access, Floor Area Ratio (FAR), sunlight interval standards, green space, parking areas, services and amenities, etc. These are currently being piloted as general principles for PRH and all other housing programs with a reduced standard compared to the commodity housing, (see Appendix 1). All PRH apartments are provided with a fitted kitchen, bathroom equipment, in-built broadband internet connections, dining tables, chairs, beds and even mattresses and curtains, all to a high specification. Underground, or surface level, car parking spaces are provided at the rate of 0.3 per unit, a high level for households considered in need of subsidized housing.*

***The household survey conducted for this study revealed that:***

- The most common complaints are the small usable area and high noise levels.
- Many households would prefer the freedom to choose between furnished, unfurnished or partially furnished units with different rent levels, particularly poorer households.
- The rigid application of design standards has prevented flexibility in responding to housing demand.
- The requirement that all apartments receive a minimum of two hours sunlight at the winter solstice is admirable, but may require additional land if site constraints make efficient layouts more expensive to achieve.

In contrast, residents in the apartments for the ‘talented’ professionals that were converted from industrial buildings into housing have some complaints about the noise, but overall they are happy with their dwellings. This includes the small living area (about 20 m<sup>2</sup> per unit) and shared laundry room per floor, and the disadvantages of an original industrial building, because of the cheap rents, good location and short, one year, contracts.

*The requirement that 20 to 25 percent of the total land area in new PRH developments be allocated for public open space, in addition to that for roads, other circulation areas and neighborhood facilities, such as local shops, health clinics and schools<sup>①</sup> imposes a substantial cost to such developments.* International experience shows that the unit cost of housing increases significantly as the area of public open space increases, though the impact is less in areas where high rise housing is proposed. Visits to PRH housing suggested that scope exists for reducing the total area of public open space and for providing more opportunities for enabling residents to put it to good use and personalize some areas, rather than remaining for general access and unused.

#### 4 Costs of PRH housing

*The latest national regulations on PRH took effect on 15<sup>th</sup> July, 2012 and specify that: ‘public rental housing is to be provided by diverse methods, including through new buildings, adaptive re-use of existing buildings, purchase, long-term lease, etc.* It can be financed by the municipality directly, but can also be invested by the private developers with supportive policy provided by the government.<sup>191</sup> Shanghai municipality has identified diverse methods to provide PRH<sup>181</sup>:

- (1). new construction in the strategic development plan, including redevelopment of shanty towns;
- (2). industrial restructuring;
- (3). key infrastructure construction and large scale settlement development;
- (4). transfer from EAH and other affordable housing;
- (5). the development of collective land in rural areas;
- (6). the re-use or remodeling of vacant industrial factories, warehouses and offices;
- (7). purchase of vacant existing housing, and particularly;
- (8). to explore the methods for private developers or other institutes/organization to participate in the provision of PRH.

*The cost of housing is mainly from seven aspects: land, construction and finishing, preparation, supporting facilities and business tax and financing cost.* Because most affordable housing projects are large scale, only major state-owned companies have the capacity in terms of financing, human resources, management and construction to undertake these developments. *Land costs represent a substantial proportion of total housing costs and therefore needs to be put to efficient use.* As shown in Table 1, the average cost for

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<sup>①</sup> In new developments re-designated as PRH from other forms of housing, the required green space standard is as high as 30 percent, resulting in large areas of expensive urban land being unproductive.

newly built PRH housing units ranges between 8,000~12,000 Yuan<sup>①</sup> per m<sup>2</sup>, including the cost of land. For example, the cost of one of the first two PRH projects in Shanghai is 9,500 yuan per m<sup>2(4)</sup>, half of which is generated by the cost of land. These costs make it important to make full use of the available FAR and improve the efficiency to which available land is put by reducing unused public open space.

**Table 1 Basic costs for PRH in Changning district.**

	Cost per m <sup>2</sup>	Estimated total costs for a one bedroom 50 m <sup>2</sup> apartment in a 24m plus high building (yuan)	Estimated total costs for a two bedroom 60 m <sup>2</sup> apartment in a 24m plus high building (yuan)
Newly built	8,000-12,000 yuan, including land cost	400,000-600,000 yuan	480,000-720,000 yuan
Re-used or converted buildings	3,000-5,000 yuan, excluding the land cost	150,000-250,000 yuan	180,000-300,000 yuan
Purchased structures	At market price	The price would be the same for the newly built, or even higher. It is up to the original type of buildings and the level of discount during the transaction. The price should be cheaper if it is a used building, because the quality is poorer and the cost of time and administration has been saved.	

NB: Decoration is 800 yuan per m<sup>2</sup> and furniture and electrical fittings are 600 yuan per m<sup>2</sup>.

From the interviews with four developers, the construction cost per m<sup>2</sup> is 3,500 yuan for underground works and between 2,000-3,000 yuan for the construction work above ground, giving a minimum cost per m<sup>2</sup> of 5,500m<sup>2</sup> yuan. For example, the main construction cost per m<sup>2</sup> of a PRH project in a city near Shanghai is as follows:

In addition to land and construction costs, the cost of imposed finishing works and furniture for PRH in Shanghai is substantial and contributes further to its unaffordability. Finishing costs amount to about 800 yuan per m<sup>2</sup>, while the cost of furniture and household electrical appliances is about 600 yuan per m<sup>2</sup>. For an apartment of 50 m<sup>2</sup>, this would impose a total cost for finishing works and furniture alone of 70,000 yuan, equivalent to 50 percent of total housing affordability for the highest income group and 1.6 times the total affordability for the lowest income households. Using the costs indicated above, and assuming the official norms, Table 2 provides estimated costs of a typical one or two bedroom PRH unit. The cost for land has referred to a PRH in the ringed area of Shanghai, where land is at a cost of 8,000,000 yuan per mu<sup>②</sup>, or 11,994 yuan per m<sup>2</sup>. Assuming the FAR is 2.5, the floor price per m<sup>2</sup> is 4,798 yuan. The construction below the ground is 3,500 yuan/m<sup>2</sup> (x) 35m<sup>2(③)</sup> (x) 0.3/unit. The services fee includes piped water and electricity and telecoms. The cost of electrical appliances is based on an in-depth interview with one PRH developer in a city near Shanghai.

**Table 2 Estimated main costs of typical PRH units in Shanghai.**

	One bed unit (50 m <sup>2</sup> )	Two bed unit (60 m <sup>2</sup> )
Land	240,000	290,000
Construction below ground	36,750	36,750
Construction (>24m above ground)	70,000	84,000
Services	47,500	52,200
Internal finishes	40,000	48,000
Furniture & fittings	30,000	36,000

<sup>①</sup> According to the local official in PRH office.

<sup>②</sup> Equivalent to 666,7 m<sup>2</sup>.

<sup>③</sup> The average floor area for one parking unit, including other relevant area, such as road, facilities, etc.

Admin costs	unknown	unknown
Electrical appliances	25000	25000
Finance costs <sup>①</sup>	5% interests for loans, free if it is from the initial investment	
Developers profit	Up to the rental level	

If the minimum costs of a PRH unit in a new development are compared to household affordability, it is clear that projects depend upon the availability of substantial, and possibly unsustainable, subsidies, irrespective of the income groups served. For example, the combined costs itemized in Table 3.5 show that the minimum cost for a one bedroom PRH apartment of 50m<sup>2</sup> is 489,250 yuan, *excluding* finance costs, taxes and developer's profit. Allowing a modest addition for these items, the total cost for a one bedroom unit comes to a minimum of 500,000 yuan. Using the same data from Table 3.5, it can be seen that the total cost of a 60m<sup>2</sup> two bedroom unit is 571,950, or a minimum of 600,000 yuan including finance costs, taxes and developers' profit.

The largest element of the subsidies for PRH developments is that of land costs. According to documents issued by Ministry of Land Resources (2009:58), land transfer fee is free for CRH and EAH (except the compulsory quota in commodity housing). However, it does not mean the land is free. The basic cost still needs to be paid and this varies from area to area and case by case, owing to the different cost of the acquisition of land.

## 5 Summary of regulatory review

PRH units are failing to offer good value for money, compared to the open market, for those it is seeking to attract (eg 'talented' professionals). In one survey in Shanghai<sup>②</sup> (sample size: 4,700), it was found that although 73 percent of households stated that they will seek a PRH unit in the future, 59 percent expect the monthly rent to be between 1,000-1,500 yuan and 28 percent expect it to be between 1,501-2,000 yuan. The existing price of PRH is far higher than the expectations of the majority. This may be because the standard of housing and equipment is higher than needed, so that subsidies result in it costing more than housing available in the market. A further problem with PRH units is that too many are located far from workplaces and social amenities, forcing tenants to spend a significant amount of time and money on public transport. The top priorities in choosing PRH are convenient transportation, followed by the rental level and availability of amenities. With regard to the location of the PRH, 44 percent said they would accept a location within half an hour's commuting to their work place, while 31 percent are willing to accept up to one hour. However, existing households in one PRH development in Shanghai complain about the poor transportation, long times spent travelling to their workplace and poor amenities. In contrast, the 'talented' professionals living in the 'apartments for the talented' are satisfied with transportation, rent levels and amenities. The principle of the central location of PRH that is mainly for individual applications in Shanghai has determined that the PRH have to be built on small areas of land because of the high land costs. Large PRH projects will only take place in suburban areas which have no attraction for tenants. The high cost of land is the major contributor to the unaffordability of PRH units. This shows no sign of reducing, due to the need for all local authorities to maximize revenues from land sales. The difference between the costs of PRH units in new build projects and converted buildings is shown in Table 3. The cheapest method is to rent other types of existing buildings.

**Table 3 Summary of diverse methods for creating Public Rental Housing**

	Supply methods	Land use	Building type	Owner	Cost per unit
Case 1	EAH and Relocation	Residential for	Residential	Housing	681,818

<sup>①</sup> Most private developers have to borrow money at high rates of interest.

<sup>②</sup> The sample included the employees in office buildings in one comparatively developed district and passengers at a major underground station, from where people transit all around Shanghai.

	housing into PRH,	affordable housing		Provident Fund Company	yuan
Case 2	Office into residential	Office	Office	PRH company	Unknown
Case 3	Industrial building into Residential	Has changed into Residential	Industrial	PRH company	208,695 yuan
Case 4	Commercial building into Residential	Commercial	Department Store	Private developer	Unknown
Case 5	Rent from private developer	Residential	Dormitory	Private developer	250 yuan
Case 6	Re-rent of Relocation Housing	Residential for affordable housing	Residential	Landless farmers	1,700 to 2,800 yuan

*One key question raised by developers is why the standard of PRH should be as high as that of commodity housing. In general, developers have highlighted the fundamental difference in the nature of homes to own and homes to rent. They argue that the latter has more short term tenants and the design standards and regulations should be different. For some reason, the regulations for individual residential dwellings have more restrictions than multi-occupancy residential buildings, such as apartments, dormitories, mixed-use buildings (eg. apartments and offices) and hotels. The building standard for apartments is much lower than for individual residential dwellings. For example, Shanghai Construction Technology Management Norms has specified that the design standards of apartments refer to the standard and regulations of hotels, which has no requirement for sunlight and green space, although they do have higher standards for fire prevention, etc. However, developers have indicated that they would consider providing PRH if they are only responsible for the construction process and can obtain a guaranteed profit margin, as applies in the case of EAH and relocation housing (capped at 3%). The compatibility requirements of land use for residential dwellings is much stricter than for other uses (see Appendix 4). In respect of the price of PRH, this is determined at the market level, and as it is a state-owned fixed asset it needs further discussion on whether it should be recognized as residential dwellings (designed for home owners) or state-owned commercial apartments. If the PRH can be recognized as apartments for commercial purpose, there is much less restriction on land use, building density and FAR, which can increase the efficiency of land use and the cost recovery is much faster. Compared to the high cost of newly built housing, other methods such as adaptive re-use, long-term lease have proved to be more profitable. In fact, the survey conducted for this study found that 80 percent do not object other resources of PRH collected by the municipality, with 34 percent would like to accept it and 24 percent would accept this option with pleasure.*

## 6 Conclusions and preliminary recommendations.

*The findings of housing demand show that PRH is more popular than homeownership by both hukou and non-hukou holding households. This makes it a popular, if expensive, form of housing for those in need. The current forms of PRH provision are not based on housing needs or demand and provide poor design and location, despite substantial subsidies, making it much less competitive and attractive compared to the private market. The only advantage of PRH is the secure tenure, which does not restrict the provision of PRH to new construction. It is recommended that future supply of PRH units should be based on a clear understanding of the extent and nature of housing demand, particularly with regard to tenure security, convenience of location, number of bedrooms, levels of fittings and furniture and, therefore, affordability. The existing private market offers a choice of locations and affordability without dependence on substantial subsidies and therefore deserves official support. A major barrier to the wider provision of PRH is that it is based on highest residential standards, and impose the highest costs and, therefore, subsidies. Such subsidies impose costs on local government which may not be sustainable and further distort the urban housing market to the benefit of some groups at the expense of others. They also enable more affluent districts and cities to outbid less affluent rivals in attracting ‘talented’ professionals, thereby further reinforcing regional inequality and impeding regional development nationally. The diversity of*

PRH projects suggests that planning and building regulations should be revised to encourage a more diverse use of other types of building. Types of PRH can be as diverse as found in other segments of the urban housing market. In addition, it is also worth considering whether new construction should be restricted to a particular land use, such as residential, or be designed to be sufficiently flexible to have the potential to be used for other purposes in the future<sup>①</sup>. The possibility of attracting private sector groups to participate in the provision of more flexible PRH options deserves further consideration. On the one hand, there is the successful example from Nanjing, where a private developer has a growing business converting vacant commercial and industrial buildings into serviced apartments. On the other hand, 80 percent of migrants would like to accept other types of buildings (rather than the newly built) collected or managed by the municipality, which they trust can provide higher tenure security than is provided in the private market. Further waivers should also be given to the standards on minimum sunlight hours, parking rates and green space provision, which generate higher costs. In cases where non-residential buildings are converted into residential use, more flexible regulations should be considered. In addition, freedom to choose the level of furnishing will make the PRH more affordable, and attractive, to households on lower incomes. While it is clear that PRH is, and deserves to remain, a central part of government housing policy, it is recommended that consideration also be given to expanding other forms of housing provision, including private rental, to create a more diverse, responsive and stable urban housing market. Policies, regulations, standards and procedures designed to create such options will enable government to formulate market interventions which meet diverse and changing needs and put available public resources to best use.

## 可持续性的可支付得起的公租房供给模式

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**摘要:** 中国计划到 2015 年提供 3600 万套保障性住房, 覆盖城镇 20% 的家庭。这项庞大的供应计划将消耗大量的财政, 自然和环境资源。本文通过对现有公租房的规划设计规范的回顾, 通过 300 份上海市中心某区的租客的问卷调查, 对 4 位参加过保障性住房的房地产开发商的访谈, 并结合其它二手资料, 总结了目前公租房供给中资源 (特别是土地资源) 还可以进一步节约的方面, 为下一步如何以更少的代价提供更可支付得起的公租房提出了建议。

**关键词:** 可支付得起的, 公租房, 可持续性

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<sup>①</sup> The 2011 Blue Book on Housing (published by China academy of Social Sciences) has predicted a decline of young workforce in cities in ten years' time, which will directly lead to the decline in the demand of low end small sized apartments<sup>①</sup>. The concept of 'long life, loose fit' has been advance in the UK as a means of promoting more adaptable building designs.

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**Appendix 1: Primary standards in affordable and PRH housing in Shanghai.**

	Minimum standards	Affordable housing	Public rental housing
Min. hours to receive sunlight on the winter solstice	2 hours	can be relaxed	For apartment type (high rise), 1 hour for at least 90 percent For dormitory type (high rise) 1 hour for 50 percent units
Green space rate	35% in new development; 25% on-site relocation of shanty towns	20 percent for central city, 25 percent for out of central city.	
Min. Central public open space per 1,000 pop	1,000m <sup>2</sup> . (public green area rate: 1m <sup>2</sup> per person). 10 percent of newly built neighborhood.	4ha for 50,000 pop, 3,000 m <sup>2</sup> within 500m distance.	
Car parking	0.6 per unit (inner ring area) at least 0.72 per unit for suburban area;	can be relaxed	For apartment-type, 0.3 per unit (inner ring area) and 0.4 per unit (outer ring area), for dormitory-type public rental housing: 0.15 per unit (inner ring area) and 0.2 per unit (outer ring)
Bicycle parking for affordable housing		1.2 per EAH and Relocation Housing unit.	1.2 per unit for apartments, 0.75 per unit for dormitories