

# Zhongguancun Cottage Redevelopment: Prospects for Low-Middle Income Housing

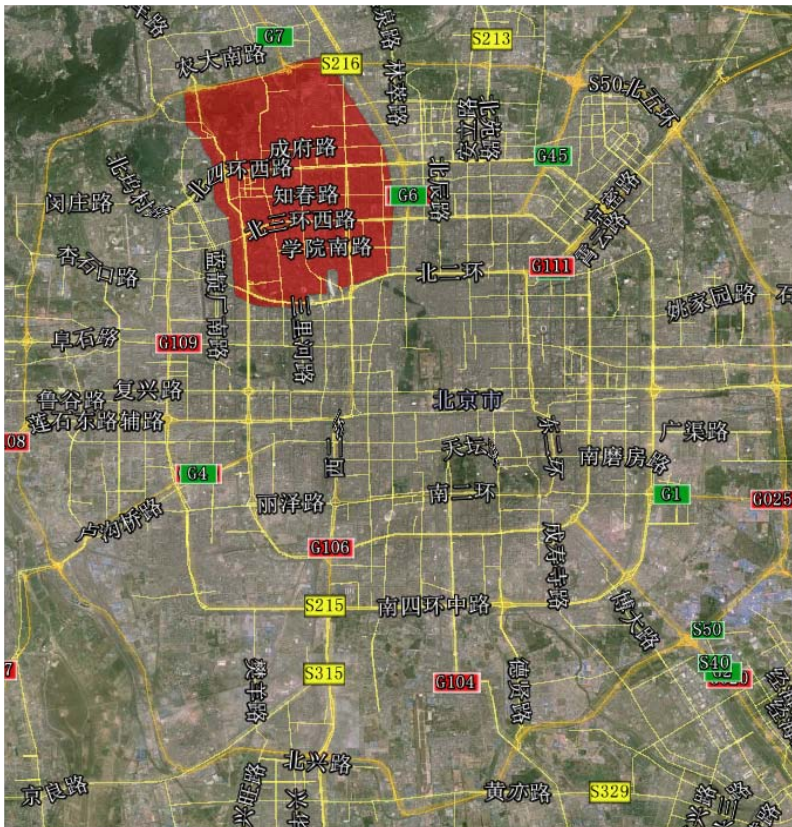
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## Introduction

China is experiencing a wave of transformation, with an unprecedented speed and scale of change in the economy, demographic flows, built and natural environments, and socio-cultural mores. This has enormous impact on the country's housing system, particularly in China's fast growth cities.

This paper explores several aspects of low-middle income housing, amidst the pressures of China's sweeping changes. It provides a historical context of housing privatization, market reforms, and government regulatory measures. Elements of the modern housing system, as pertain to low-middle income (LMI) households, are then presented: current LMI housing strategies, market conditions, and policy and programming frameworks. The discussion is then grounded in a study of the Zhongguancun Cottage Redevelopment in Haidian District of Beijing. Zhongguancun is a dynamic and strategically important growth area, with steep competition for land uses and redevelopment funds. We offer some recommendations for preserving and producing LMI housing at this local level.



<p><b>Conversion Note</b></p> <p>1 sq.m. = 10.8 sq.ft.</p> <p>100 yuan = 16 USD</p>
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Figure 1: Haidian District, Beijing  
Source: Google Earth

## China's Housing System and Market Reforms

China's housing system has undergone a complete metamorphosis over the last thirty years. Under Mao Zedong, housing was provided by the work unit – *danwei*—to the vast majority of society. Following Mao's passing, political leader Deng Xiaoping ushered in a sweeping Reform Era, that brought about the "Open Door" policy and a socialist market economy. With this came a gradual, then explosive transition to commercialized housing, now strongly based in private home ownership and market provision. This process has been referred to as "probably the largest neo-liberal reform project ever implemented in the world" (Wang, *et al*, 2012:356). In 1981, over 80 percent of urban housing was in public ownership. Within two decades, over 80 percent of public housing had been sold, "mainly to their occupiers" (*ibid*: 345). While overall physical housing conditions (quality, services, and overcrowding) have improved since housing reform (Zhang, 2011:234), these improvements have been experienced unequally across the income classes.

The market transition process has had its share of problems. Massive housing speculation, housing inequality, residential segregation, and large-scale evictions mar the housing landscape in many of China's cities (Cook, 2013:10; Yang and Wang, 2011:386; UN-Habitat, 2012:129). There is a stark mismatch between the housing needs of most urban residents and the types (and prices) of housing offered by the market. Some scholars contend that there is now "[an] overdependence on the urban housing market as the major provider of housing" (Chen, *et al*, 2011:7).



Figure 2: Beijing Housing Price, over past three years

Source : Anjuke Beijing, 2013. <http://beijing.anjuke.com/> (a real estate transaction network)

Over the last decade and a half, housing prices have skyrocketed. At 2011 house prices in Beijing, "It would take a person earning the average salary 50 years to save enough money to buy a 100 square meter apartment, assuming he saved every penny he earned" (Wang and Qin, 2011:1). Figure 2 displays the trend over just the last three years: a 60 percent increase in sale price per square meter.

Chinese housing policy has clearly reached a critical stage in which free market mechanisms must be more equally balanced with growing public needs. Though the central government has regularly attempted to curb speculation and guide the housing system with a series of incentives, restrictions and regulations over the years, the capitalistic pursuits of developers, housing investors, and the government itself have proven difficult to subdue. (Note: local governments may earn a large portion of their revenue from land sales to developers.)

In addition to the transition to a market-based system and the speculative frenzy that ensued, the demographics of Chinese cities are in major flux. Mass migration from the Chinese countryside and an influx of foreign nationals, have placed added stress on urban housing systems and have increased the complexity of housing planning and provision. There is currently a substantial knowledge gap “regarding urban housing demand from low-income urban families and rural-urban migrant workers in the urbanization process” (Chen, *et al*, 2011:1).

### **Under-housed Populations**

A variety of urban populations are widely considered to be under-housed. The “floating population” or *liudong renkou* is comprised of mostly low-skilled rural-to-urban migrants who have limited access to urban services, due to China’s *hukou* system which was intended to restrict population movement. The floating population is “usually excluded from urban population statistics” (Chen, *et al*, 2011:3) and faces “major barriers to full participation in the housing market” (Cook *et al*, 2013:7). According to a 2008 Beijing Bureau income survey, migrants earned an average of roughly half that of local Beijingers (Zheng *et al*, 2009:435). Due to limited income and a desire to save for remittances, migrants commonly live in overcrowded arrangement, often with less than 10 square meters of space per person (Deng *et al*, 2011:177). Many migrants find housing in urban villages, discussed in the following section. Other housing strategies include living in overcrowded market-priced apartments, or in illegal basement and rooftop homes. Very little research has been conducted on households living in these latter arrangements.

Young college graduates are another population that is commonly under-housed. Occasionally referred to as “the ant tribe”, these educated young professionals are simply out-priced from the housing market. Like migrants, they too tend to “concentrate in urban villages, often in ‘edge city’ developments” (Cook *et al*, 2013:11) and in high density living arrangements. Still other populations, such as inner city residents in old and poorly serviced settlements (like *hutongs*, or low-rise alleyway neighborhoods) and apartment dwellers, living in low-quality mid-rise blocks from the Maoist era, have special housing improvement needs.

### **Collectively Owned Urban Villages and Inexpensive Housing**

China has a unique dual land ownership regime in which rural and urban lands fall under different administrative and governance systems. Rural areas are collectively owned, while cities (at least initially) exist on state-owned land. This seemingly clear distinction, however, has been blurred with the demographic and economic shifts of the last few decades. As urban areas swelled following the Open Door policy, they engulfed rural villages in the peri-urban areas. Some were administratively absorbed into the city proper, while others retained their rural status, and distinct legal and governance structures. These areas are sometimes referred to as *chengzhongcun* or “village within the city”.

Collectively owned lands represent a significant and growing proportion of potential construction areas within Beijing. In fact, in 2010, the total land area of construction-ready collective land (1540 sq. km.) exceeded the total area of state-owned construction-ready land (1230 sq. km.) (Beijing Master Plan (2004-2020) Implementation Evaluation Report, 2010:12).

Collectively owned lands are already a major source of low-middle income housing in Beijing, especially for LMI populations who seek very low rents. But there are many legal

grey zones surrounding the collective lands or villages, which operate under somewhat collective ownership with restrictions on land uses and sales. While it is common practice to rent residential space to those outside of the collective, its legality is dubious at best.

Living conditions are typically cramped: A 2007 survey found that “the mean per capita living space is 8.2 square meters, less than one-third that of Beijing’s formal housing sector (27.0 m<sup>2</sup>)” (Zheng *et al*, 2009:434, referencing Beijing Bureau, 2008). Basic facilities and services are also often lacking: “With these compact living spaces 90% of [residents]... don’t have bathrooms or kitchens, 86% don’t have heating, and 93.3% don’t have air conditioning” (Zheng *et al*, 2009:432).

The villages’ relationships with adjacent municipal governments also vary widely. With a toolbox of carrots and sticks, municipal governments often exert some planning and development pressure on the villages. But, entrepreneurial villagers who have “found themselves in possession of prime land for migrant worker rental... respond rationally by maximizing the yield of their [land] assets. Self-built high density is thus the norm rather than exception in [these] areas” (Wu *et al*, 2012:7).

These urban villages are under major threat of redevelopment, in which informal landlords make “windfall gains” and renters (largely migrants) are displaced (Wu *et al*, 2012:4). As of 2008, compensation to villagers was calculated as “six to ten times the average annual output of the farmland in the previous three years”, plus relocation cost and additional compensation based on household size (Wu *et al*, 2012:6, referencing: Tian, 2008; Zhao and Webster, 2011). However, such compensation may still fall short of the rents amassed from owning a dense bundle of substandard apartments. In fact, rental rates within urban villages are nearly that of the surrounding market prices, per square meter: “On average, rent per square meter in adjacent formal rental housing is only 1.23 times that of urban village housing” (Zheng *et al*, 2009:436). Hence, many villages “resist any formal development control by the municipal government over the use of their land and in some cases to resist urban redevelopment” (Wu *et al*, 2012:9).

Redevelopment has serious consequences for the housing security of the LMI populations who access this unique housing form. Further, there may be negative repercussions for local economic vitality: “the dominance of the beautification and modernization narrative in discussions about urban village redevelopment is rarely balanced with a discussion of the opportunity cost to the local economy of removing the main source of low-cost homes” (Wu *et al*, 2012:13).

### **Government Low-Middle Income Housing Programs**

As previously mentioned, the formal market is now the primary mechanism for housing provision in China. However, for those in the low-middle income (LMI) classes, the market has done very little to supply appropriate housing. The term “LMI housing” will be used broadly herein to refer to housing types accessible to low-middle income households (as defined by local income categories). This includes housing provided through urban villages and government-supported housing. Further housing strategies, such as overcrowded living in market rental units, and informal settlement are pursued by LMI households to varying extents in different cities.

Though the government has privatized the housing system, it has continued to produce policy documents that detail plans for LMI housing provision through market mechanisms and publicly supported programs. The scope and objectives of these plans have, however, been reduced over time. Development restrictions aimed at limiting housing costs have

been enacted. For example, since 2006, it's required that every development devote 70% of its finished space to units less than 90 square meters (Deng *et al*, 2011:177). However, given high costs per square meter, this form of housing is still unaffordable to LMI populations.

Several federal programs, called *bao zhang fang*, exist to support LMI housing. Two rental programs (Public-Rental Housing; and Low-Rent Housing ) providing mostly-publicly-owned housing, and subsidized market rentals, respectively. Two other programs (Economical and Suitable Housing; and Capped-Price Housing) support home ownership through substantial subsidies, unit size restrictions and developer profit caps. Also, the Housing Provident Fund "is a compulsory housing savings program in which both employers and employees contribute a certain percentage of the employees' salaries" which may be withdrawn for home purchase, home improvement, or self-construction (Deng *et al*, 2011:174). Additionally, all capital gains from this fund must be reinvested into Low-Rent Housing (*ibid*:177).

The central government's principal policy document, The Twelfth Five-Year Plan, dedicates 619 billion yuan to help build and acquire 36 million units of LMI housing units, and puts new emphasis on the importance of rental housing forms. If the government meets this target, then "social housing will be available for 20% of urban households, compared with about 7% today" (Wharton, 2011:1). However, the Ministry of Housing and Urban-Rural Development (MoHURD) estimates that the central government's dedications will only cover a fraction of the cost of production (*ibid*:2). Local governments are expected to pick up the balance.

Herein lies one of the primary pitfalls in China's LMI housing policies and programs: inordinate responsibility is placed on local/district governments to finance (through land gifting and other subsidies), facilitate, and regulate LMI housing production and allocation. In 2011, though local and central governments each collected roughly 50% of government revenue, local governments made 85% of the reported expenditures (China Statistical Yearbook, 2012). In terms of "housing security" expenditures, local governments contributed a whopping 91% of the proportion (China Statistical Yearbook, 2012). However, local governments have very few real incentives to support LMI housing, as one of their principal sources of revenue (perhaps up to 50-60%) is derived from market-priced land sales to developers and associated fees and taxes, under the state-controlled land market (Wharton, 2011:1; Wang, *et al*: 2012, 355).

Developers also have little incentive to become involved with LMI housing production. Profits are lower, market changes are rapid, and frequent government policy adjustments provide a risky and unattractive business environment. "Only 30 out of 100 developers participated in [LMI] housing projects between 2007 and 2010," according to a report on the corporate social responsibility activities of China's real estate companies by MoHURD (Wharton, 2011:2).

Since the Reform Era, LMI housing programs and plans have rarely been fully achieved, due to lack of stable funding, lack of incentives, and little enforcement. Though total housing construction has swelled over the last decade, less government-supported LMI housing was constructed in 2010 (just under 400,000 units), than was in 2000 (more than 600,000 units). In 2000, 28% of all housing units constructed were government-supported LMI housing. By 2010, the percentage had dropped to just 7% (Wang *et al.*, 2012:348 and Cook *et al*, 2013:11).

	<b>Target of Beijing's Five-Year LMI Housing Plan (2006-2010)</b>	<b>Actual Achievement</b>
<b>Public-Rental Housing</b>	no target value	1.5 million sq.m
<b>Low-Rent Housing</b>	1.5 million sq.m	1.1 million sq.m
<b>Economical and Suitable Housing</b>	15 million sq.m	10.1 million sq.m
<b>Capped-Price Housing</b>	15 million sq.m	16.9 million sq.m

Figure 3: Progress of Beijing's LMI Housing Programs

Source: Liao Zheng Xin, 2012

### Beijing's LMI Housing Commitments

Beijing is a rapidly growing city of over 20 million residents that is gaining an average of 600 thousand newcomers per year. Within Beijing's tight land market, low-middle income housing is in high demand and low supply. As shown in Figure 2, the city's housing prices have exploded. Several government programs and regulations work to provide low-middle income housing (both rental and ownership models), however results have been insufficient when compared with levels of demand.

In Beijing's newest Five-Year LMI Housing Plan (2010-2014), the Municipality outlines general strategies for promoting LMI housing stock and makes concrete land and financial commitments to LMI housing through budgetary expenditures and development dedications. Several methods for promoting LMI housing stock are proposed, including 1. Mixed-Use residential with manufacturing; 2. Encouraging companies to develop employee housing; 3. Buying investment- and other vacant properties, and 4. Placing increased emphasis on promoting rentership over ownership housing forms.

Beijing has committed 8 square kilometers of land for LMI housing projects in 2013, and has "pledged to start building 160,000 affordable housing units" (Zhang, 2013:1). The Plan further outlines general land development stipulations: 30% of units in new developments, 50% of land converted into residential use and 10% of local governments' land resale profit should be dedicated to LMI housing (Beijing People's Government, 2010b). Though these appear to be strong policy measures, the compliance with and effectiveness of these regulations remain unclear. Beijing's real commitment to LMI housing is certainly questionable: within the Beijing region, only 1.7% of the general budgetary expenditures were allocated to housing security, compared with an average of 3.8% when considering all of China's regions (China Statistical Yearbook, 2012).

Much of the responsibility for actually implementing the Plan has been delegated to local districts, which are also required to develop their own District LMI Housing Plans. The Beijing Municipal Land Bureau has announced that districts must complete 70 percent of their annual plan during the first half of the year, "and those who cannot meet the requirements will be suspended to develop the land" (Zhang, 2013:1). The Ministry of Housing and Urban-Rural Development has further called upon local authorities to innovate new ways of financing and expanding low-middle income housing, in line with the country's history of "gradualist and experimental" housing reforms, based in "trial and error" (Deng *et al*, 2011:168).

## Applied Study: Zhongguancun Cottage Redevelopment in Haidian District

### *Introducing Haidian District*

While population growth has certainly spurred an outward expansion of the Beijing's footprint, there is now a major focus on infill and redevelopment. One of the major districts slated for redevelopment is the Haidian District in northwest Beijing. With a booming economy (its GDP has tripled over the past decade) and a burgeoning population (see Figure 4), Haidian is faced with both accommodating new growth and improving the quality of the urban environment and services (Haidian Bureau of Statistics, 2012). While we authors recognize that redevelopment is a highly contentious issue which can involve large-scale eviction of residents, we also understand it as a common structural element of land development in urban China. As such, this makes for a good applied study case, with potential recommendations and implications for other redevelopments.

	2004	2005	2006	2007	2008	2009	2010	2011
<b>Population</b> (10,000 persons)	249	258	269	281	293	308	328	340 *(150 are migrants)
<b>Non-Natural Growth Rate</b> (Immigration) (10,000 persons)	31.2	41.7	-9.3	19.8	25.5	23.3	18.0	24.9
<b>Households Dismantled &amp; Removed</b>					2112	5070	2074	2352
<b># Sets of Rental Housing</b>					4879	4927	2934	1061

Figure 4: Haidian District Statistics

Source: Haidian Bureau of Statistics. 2012. *Haidian Tongji Nianjian* (Haidian Statistical Yearbook).

This compilation of officially-published statistics clearly shows that Haidian is a district experiencing rapid change. We see steady population growth, with a 44% migrant population as of 2011. The non-natural growth rate has fluctuated wildly, and even flipped directions in 2006 (perhaps due to a large scale removal effort). Again in 2009, we see a major increase in household clearance. Further, over the four years of data provided, it is apparent that the net supply of rental housing has seriously declined (though the unit of measurement is unclear). Unfortunately, clear and accurate data on LMI housing stock in Haidian were not available for this study. Certain inferences may be made, though, for example presuming that a large percentage of the rental stock is home to LMI households. And while owners of households that are dismantled and removed through redevelopment receive compensation in the form of new apartments (sometimes multiple) and remuneration, renters of such apartments have no recourse. Also, it may be presumed that the myriad informal arrangements that provide housing to LMI households are not likely to reappear in new formal developments.



Haidian District's Housing and Construction Committee is the principal entity responsible for the low-middle income housing sector within the district. They are certainly faced with many challenges associated with the retention and production of LMI housing amidst massive redevelopment plans and population growth. However, there are also many opportunities. The Committee may act to balance redevelopment pressures with the (growing) public's growing housing needs. This may include mitigating the impacts of redevelopment evictions and inserting LMI housing as a priority use for newly acquired redevelopment lands.

The District does have stated LMI housing objectives: The District's Five-Year LMI Housing Plan includes securing 75,000 units (average of 15,000/year) at a total of 7 million square meters (average unit size of 93 square meters). Rentals are intended to comprise 60% of these units. As of 2012 (over 2 years into the Plan) only 14,000 units had been created, including 5,000 rentals and 9,000 under ownership (well under the 60% rentership guideline). In government statistics, both compensation apartments and new LMI housing are bundled into the same category. So, while it is difficult to discern true net increases in LMI housing, it can be deduced that 50% more land area is dedicated to compensation apartments than is to publicly-supported LMI housing in Haidian District (Beijing Municipal Bureau of Land and Resources, 2013:1).

Within the current land development regime, it is observed that the Haidian District is disincentivized to retain existing LMI housing in low density sites. Low-density areas are principal targets for local government purchase, as they would logically require lower levels of compensation than other areas, because there are fewer units. Given the rapid rise in land values, there is also incentive to purchase properties hastily. Furthermore, as compensation apartments for removed residents count towards a district's LMI housing construction goals, there is further incentive to simply expand removal efforts.

### *Introducing Zhongguancun*

The Zhongguancun area of Haidian District in Beijing was used as a study case, to assess some of the issues and opportunities associated with LMI housing provision. Zhongguancun is a dynamic and strategically important growth area, with steep competition for land uses and redevelopment funds. What follows is a description of the Zhongguancun context, and a list of LMI housing solutions, that we propose for trial application in the Zhongguancun redevelopment area. These recommendations were developed through a review of applicable area plans, including proposed area redevelopment plans; a review of literature on China's low-middle income housing programs and funds; semi-structured interviews with experts in Chinese low-middle income housing development and development finance; discussions with sub-district leaders, and; site visits.

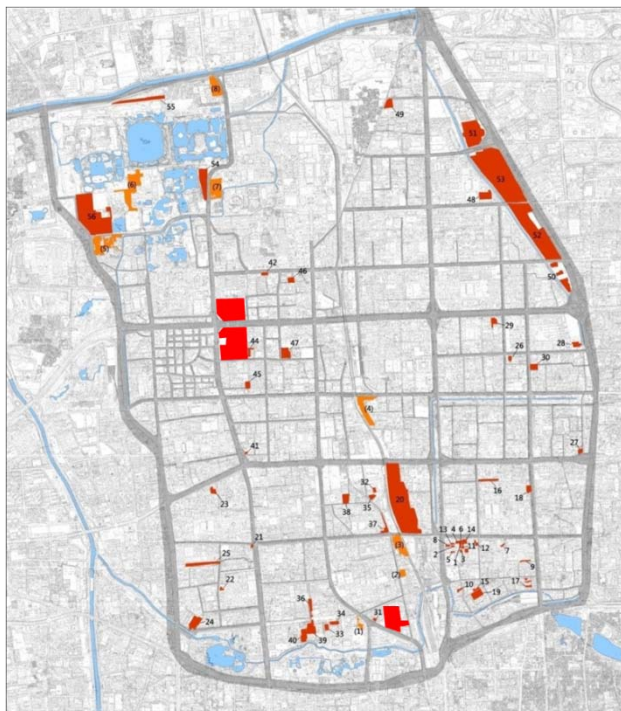
Within Haidian, the Zhongguancun area is 75 sq.km. and includes universities and research institutes (65% of the core land area), collective lands (11% of the core land area), expanding manufacturing zones, and a growing cluster of IT, high-tech, and creative industries. It is home to 1.2 million residents (including 33.8% migrants and 24.8% college students), with a population density of 22 thousand people/sq.km.

Within the Zhongguancun area, the government has identified a number of strategic priorities that it seeks to address through a major redevelopment program that will roll out over the next few years. Primarily, a strong emphasis has been placed on facilitating and spatially accommodating economic development activities. There is also a push to improve quality of life in the densely populated city, which is (arguably) overbuilt in many areas, including development on environmentally sensitive lands. In these areas, the city government wishes to insert parks, public services and amenities, and improve connectivity and emergency vehicle access through road development. We (the authors) also see this



redevelopment project as a great opportunity to strategically address low-middle income housing needs and meet official government housing objectives.

The Zhongguancun Cottage Redevelopment project is in fact already underway. Planning, rezoning, and the clearance of present uses and residents are all taking place concurrently. Sixty-four sites, including many low-rise residential sites (building with 5 or few stories), have been identified for clearance.



*Figure XX: Identified Zhongguancun Cottage Redevelopment Sites*  
Source: China Academy of Urban Planning & Design, 2013.

### *Local Solutions to Improve Low-Middle Income Housing Supply*

There are many potential policies and plans of action that could promote LMI housing retention and production within the Zhongguancun redevelopment area. Layers of development regulation and public finance reform at the central and municipal levels would indeed have an enormous impact. However, this section focuses on actions that are within the control of the district government.

These recommendations would require local government officials to take a very proactive role in directing, facilitating and collaborating on a variety of LMI housing initiatives.

We recommend that the Haidian Housing and Construction Committee focus their efforts in the following eight areas: 1. further research of local LMI housing needs; 2. stricter conformance with existing development regulations and revenue dedications; 3. a standardization of the discretionary elements of the development approval process; 4. the preparation of targeted and well-orchestrated developer deals; 5. preservation of existing rental stock; 6. collaboration with collectively-owned villages; 7. expansion of student and workforce housing, and 8. experimentation with developer-operated LMI rentals.

There must be a clear assessment of the district's current and projected LMI housing needs. To date, housing construction objectives have been made to be generally in compliance with municipal objectives, but without a strong understanding of local housing demand. Future

housing plans should be in alignment with demographic trends and the strategic development trajectory of the district. Information on the types of LMI sub-populations and household structures will help tailor housing plans and programs. While this knowledge gap is not a major issue at the moment (because *any* form of well-located LMI housing will be filled immediately), housing programs will need to become more targeted and refined over time.

Many improvements can be made within the existing policy and regulatory structure. The District should review its current policies and plans for conformance with local, municipal, and central LMI housing guidelines and regulations. According to central and city government, the following should be dedicated to LMI housing: 30% of units in any residential development; 10% of profit from local government land sales; and 50% of land area in any newly designated residential zone. Local conformance with these regulations has lacked clear documentation and anecdotal evidence points to a lack of enforcement. The District's current Five-Year LMI Housing Plan is also not in accordance with the Beijing municipal guidelines restricting unit size (in an attempt to limit sale price). The District's housing plans include the production of units with the average floor space of 93 sq.m., which is well above the 60 sq.m. guideline stated in the Beijing LMI Housing Policy (Beijing People's Government, 2010b). Units of this size are not affordable to low-middle income households. A more appropriate plan would increase the number of units, while retaining the same (or more) total floor area. Greater enforcement and transparency on these measures would surely support increased LMI housing production.

Haidian District government may also be more proactive in designing LMI housing deals that are attractive to developers. This may include bundling or packaging sites into single deals that provide developers with access to coveted properties, while also securing substantial levels of LMI housing production. Additional developer incentives may also be offered, such as increased FAR, lower land prices, waived development fees and taxes, and streamlining development processes. However, as these incentives are already common elements in standard development negotiations, they wield limited power in leveraging LMI housing production. Local government may consider formalizing and standardizing the discretionary elements of the development approval process. In this way local governments can achieve more leverage when offering easements or perks as incentives for special cases, such as the development of LMI housing stock.

There must be a more thorough consideration of the rental housing stock, with careful planning to both retain current stock and promote increased future stock. In accordance with the Beijing Five-Year LMI Housing Plan, as well as the Haidian District Plan, rentership must be promoted as an integral housing form. Yet, rental units are quickly disappearing. As of the 2012 update on Haidian's progress towards its Plan, the proportion of rentals produced (versus owner-occupied units) is well below the projected 60% mark. At the very least, local government policies should support the replacement of housing forms that have been removed. This means that when rental housing is removed, it should be replaced with nearby rental opportunities at similar cost and (ideally) a prioritization of placement for removed renters.

To help preserve existing rental stock, local officials may also choose to reconsider the purchase of select redevelopment sites. Through a calculation of site densities, land acquisition costs, land sale prices, and maximum allowable FARs, we have identified several sites for which dismantling and removal should be reconsidered. These sites are expensive to acquire (with current FAR exceeding 1), small (less than 10,000 sq.m.) and unattractive to developers, because of the difficulty of construction.

Further, local officials may consider delaying the clearance of housing on newly acquired sites. Instead of immediately clearing all sites that transfer into local government ownership,

we recommend that the government consider retaining rental units on sites with a high proportion of rentals and temporarily transferring them into a public rental regime. This would allow many residents to remain *in situ* until perhaps other rental options are developed. In the meantime, the local government's ownership of the property has already been secured and values are accumulating, should future redevelopment be desirable.

Collectively owned village lands offer a unique opportunity for local officials to collaborate with village residents on LMI housing provision. Officials may encourage the improvement of the environmental quality and safety of current LMI housing, while partnering with villagers in the construction and management of public rental housing. In myriad past cases, village redevelopment has almost always meant an expulsion of the low income renter population. So, special safeguards must be put in place to ensure that massive displacement does not occur. It is helpful to note that migrants currently pay almost market rate per square meter (Zheng *et al*, 2008). The important element would be to create rental units with appropriate size to meet the affordability requirements of these individuals and households. Housing could include communal facilities and amenities, with privacy partitions that may be removed over time, should the conditions of the housing system change.

Student and workforce housing should also be avidly pursued. On low-density university-owned lands (such as the Zhufangcun site of Beijing University), universities should be encouraged to produce housing to meet the needs of students, professors, and staff. When universities have knowledge development partnerships with start-ups or other small enterprises in IT, high tech, and creative industries (as is commonly the case in this district), they should be further encouraged to support housing development for their employees. Design competitions may be held to stimulate innovative thinking and build awareness around workforce housing, university housing, and migrant housing. Such competitions have been conducted elsewhere with great success.

Finally, the District may wish to partner with developers that are interested in managing buildings for LMI rentals. As the supply of developers has saturated the local demand for development services, many are exploring related sideline business ventures. The Beijing government has expressed interest in pursuing this strategy. However, there would need to be close regulation of rental prices, to ensure that the units are actually serving LMI households.

Within the Zhongguancun Cottage Redevelopment, ample opportunity exists to promote LMI housing through improved conformance with current policies and regulation, more proactive dealings with developers, universities and urban villages, and innovative and experimental arrangements. The overall structure of Chinese government, and its role in the land market and the banking industry provide a unique combination of traits that could, if wielded correctly, bring about fantastic improvements in low-middle income housing provision. Housing policy is maturing over time. Market shocks and distortions are being incrementally addressed. However, structural changes in local government finance, stricter enforcement of existing development regulations, and reliable LMI funding mechanisms are needed in order to bring about deeper and lasting change in LMI housing provision.

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