Estate-level Facility Provision and Management in Market-rate and Resettlement Coexisting Housing Compounds

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Abstract

Market-rate and resettlement coexisting housing compound (MRCHC) is a special model of mixed-income neighborhood merging with the dilapidated housing renewal in the major cities of China. The provision and management of estate-level facilities and amenities are not performed well enough to serve the neighborhoods' daily needs for recreation, services and utilities. Moreover, sharing estate-level facilities have resulted in discord and separation between the market-rate and the resettlement sections. This thesis aims to identify the factors that lead to the problems and to explore the potential improvements for the future developments. After an introduction to the dilapidated housing renewal and the relocation, four cases located in the inner city of Beijing are evaluated and compared in terms of quality of facility provision, quality of facility maintenance and the degree of discord between the market-rate and the relocated residents. Previous mixed-incom housing practices in U.S. and Canada are studied to explore potential improvements for the current problems.

This thesis finally concludes that, first, public subsidies should serve as the major source to bridge the gap in the capability to pay maintenance fees between the market-rate and the resettlement residents, while commercial leasing income and inter-neighborhood cross-subsidies can serve as the subsidiary sources. Second, the management structure in MRCHCs should be improved by establishing competent homeowner committee board, involving governmental and non-profit sectors and strictly enforcing the community rules.

Keywords: Market-rate and resettlement coexisting housing compound, Estate-level common facility, Provision, Management, Social interaction, China, Beijing, Urban, Mixed-income
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CHAPTER 1 INTRODUCTION

Market and Resettlement Coexisting Housing Compound (MRCHC) is a special prototype of mixed-income housing merging in the urban renewal, one of the dramatic transformations that most of Chinese major cities are going through. During the urban renewal process, government has gradually taken the use right of land away from the original residents through compulsory land acquisition, to give way to the construction of new city infrastructure and housing developments. The persons subject to demolition and relocation (PSDRs) receive either monetary compensation or the exchange of property titles from the real estate developers. In the case of in-kind compensation, most households are relocated in the peripheral urban areas. In order to decrease the special segregation in housing market and to stabilize the urban renewal process, on-site relocation is required in certain cases. One of the cases is dilapidated housing renewal, in which the designated old houses are displaced by new residential or commercial development.

The dilapidated housing renewal currently relies heavily on for-profit development. In order to alleviate the financial burden on the government and to accelerate the renewal process, private developers were introduced to the demolition and relocation process. By providing on-site relocation housing for the PSDRs, developers gain land leasing fees exemption in return. After accommodating the PSDRs, developers can build commercial facilities or market housing on the residual land. This procedure has led to the generation of a specific housing prototype: Market-rate and Resettlement Coexisting Housing Compound (MRCHC). The prosperous real estate from 1990 to the early 2000s made housing redevelopment extremely profitable. The inner city area the area around and within
the second ring road in Beijing in particular became very attractive to developers. As a result, a large amount of MRCHCs have emerged in the core area of Beijing.

The residents in MRCHCs are characterized by mixed income levels. The relocated households are middle-to-low income residents who have lived in the inner city for several generations. The new residents, who can afford the market units in the central location of Beijing city, belong to the high-income tier. The mixing aims to raise the residential quality of the relocated households by sharing public resources between the market-rate and the resettlement sections.

However, it turns out to be difficult to establish healthy and harmonious relationships between the market housing and relocated residents in MRCHC. The uneven maintenance fees have become a barrier for the market and resettled residents to peacefully share the communal facilities and amenities. Out of consideration for the low income relocated households, the government sets the maintenance fee for these residents at the same level as economically affordable housing, which is one third to one half of the market level. In fact, the market housing residents are made to subsidize the relocated households in maintaining the facilities and amenities. The residents argue about the fairness, especially given the fact that the resettlement residents are using the public facilities and amenities in much higher frequency and less proper ways. Treating the displaced residents as deleterious to the neighborhood health, the market housing residents hope to be separated.

This hope then leads to either estrangement or endless debates between the market-rate residents and relocated residents. For instance, in Fuguiyuan, a
housing estate in Beijing composed of 921 market units and 1920 resettlement units. Only one year after the estate was occupied, the market-rate housing and the resettlement housing were separated by fences because of the market housing residents’ unwillingness to share the communal facilities. The market housing residents now possess the majority of facilities. Due to the lack of amenities in the resettlement housing side, one can easily catch sight of senior people sitting on their own chairs on the sidewalks or a girl gingerly cycling on the outside lane to avoid the busy traffic, with a worried grandma watching behind. The market housing sector and the resettlement housing sector currently have independent management systems and neighborhood activities. There are few interactions between the two groups of residents as well. Eight hundred meters away from Fuguiyuan, in Glory city, another MRCHC, controversy about whether to fence the market housing has lasted for one year. The integration at building level between market housing and resettlement housing also makes it difficult to clearly separate these two types of housing. The debates are still going on. The quality of property management keeps dropping due to refusals to pay the maintenance fees from a majority of residents.

Although some developers try to design the market housing and resettlement housing as separate neighborhoods to avoid conflicts, the current policy is unable the guarantee that the relocated housing will be provided with qualified facilities and amenities. Providing facilities, amenities and management service that satisfy demands of all the residents and properly distributing the maintenance cost between the market-rate and resettlement sections become critical factors to promote harmonious atmosphere in MRCHCs.
Based on the current problems, this thesis raises the core research question of how to provide and manage the communal facilities in MRCHCs to promote harmonious neighborhoods. Two sub research questions are addressed in order to explore the causes and solutions to the key question.

What factors lead to the current controversies about facility usage and management in MRCHCs?

What models can be applied to relieve the tension among different income groups and are these models applicable in the Beijing context?

In this research, communal facilities and amenities discussed will concentrate on those provided with the construction of housing estates by developers, used and managed at estate level. The provision means deciding the amount and the location of the communal facilities. The management services include fund raising, maintenance, and accessibility control.

This thesis starts with an overview of the procedures and compensation methods of relocation. The income features of the residents and differentiation in design and construction will be introduced, as well, to explain the divergences between the two housing types. In Chapter 2, four cases in Beijing are studied to compare the quality in terms of facility provision, management and social interaction. The impacts from factors, such as degree of integration, management structure, and amount of commercial use, are examined to reveal the causes of the current problems. After the case studies, models successful in fund raising, management
structure, and rules enforcement are reviewed. These models are not direct solutions to current problems; they attempt to indicate the potential directions for future MRCHC development.

The thesis concludes with the potential tools to improve the communal facility provision and management in MRCHCs. Differences and similarities between the example cases and the targeted cases are addressed to demonstrate the applicability of these tools in the Beijing context.
CHAPTER 2 BACKGROUND OF DILAPIDATED HOUSING RENEWAL

2.1 Dilapidated Housing Renewal and Urban Redevelopment in China

Starting from the early 1990s, the old and dilapidated housing renewal has been an important component of urban redevelopment in the major cities of China. In Beijing, from 1990 to 2000, 168 dilapidated housing renewal projects were approved and launched. 14,500,000 m$^2$ of new construction took the place of 4,990,000 m$^2$ of old houses. 184,000 households were subjected to the demolition for the redevelopment. The total investment reached ¥46.9 billion (Zhou 2002). In Shanghai, 24,750,000 m$^2$ of old housing were demolished and 531,300 households were involved (Wu 2004). Such large scale housing redevelopment has dramatically changed the city images, but it has also brought in new urban problems.

Because of the large scale of demolition and the rapid pace of the redevelopment, the relocation of displaced households has loaded a heavy burden on the city’s housing provision. The municipal governments compensate and re-house the PSDRs in two ways: monetary compensation and in-kind compensation, which means the PSDRs receive either the amounts of money or new property tile equal to the market value of their old houses.

At the beginning stage of old housing renewal, the municipal governments funded the compensation and relocation. Later, the substantial cost stopped the
government from performing the redevelopment on their own. They began to attract private capital to leverage the new construction. Private developers are delegated the redevelopment of the old neighborhood parcels with exemption of land lease and municipal construction fee, which can take up to 11% of the total investment (Developing Trends and Policy Choices of Dilapidated Housing Renewal in Beijing Research Group "Final Report: The Developing Trends and Policy Choices of Dilapidated Housing Renewal in Beijing" 2002). After relocating or compensating the PSDRs, developers can build for-profit programs. In most cases, over half of the PSDRs will be relocated on-site. The combination of for-profit development and old dilapidated housing renewal then generates a new prototype of housing: the Market and Resettlement Coexisting Housing Compound MRCHC. The MRCHC projects are mainly distributed on a kilometer wide band along the second ring road.

*Figure 1. Distribution of dilapidated housing renewal projects in Beijing, 1998 (Fang 2003)*
2.1.1 *Demolition and Replacement Process*

Stakeholders involved in the demolition and replacement processes are typically displaced households, municipal governments, developers, and sometimes, demolition companies.

The process of replacement determines that the designs of resettlement housing and market housing take place in different phases of the redevelopment. A typical dilapidated housing renewal project begins with developers’ application. After inspecting the developers’ qualification, the district renewal office decides whether to approve the application. Once the developer is assigned to the project, it will initiate the compensation negotiation with the subjected households. The schematic design of the resettlement units is necessary at this stage to provide the PSDRs with a clear scenario of their future residence. Before reaching agreement with the subjected households, developers are not permitted to clear the site. The time for negotiation can take as long as 3-4 years. To avoid being trapped by impasse, most developers choose to leave the design of the market housing until after all the negotiations with PSDRs are settled. As a result, the designs of market housing and resettlement housing are relatively independent processes. These two types of housing are usually integrated in clusters. More thorough mixing at building or unit level is seldom adopted in this type of development.
2.1.2 Income Features of Residents

The residents of MRCHCs are chartered by a mixed-income spectrum ranging from high-income to very-low-income\(^1\). In China, there are few censuses of the

\(^1\) Refer to the income level scale in U.S.: extremely Low-Income (<30% AMI), very-Low-Income (30-50% AMI), low-Income (50-80% AMI), moderate-Income (80-120% AMI), high-income (> 120% AMI). AMI refers to area median income.
income distribution at community level. However, the income feature of the market housing owners and the resettlement housing owners can be derived from clues such as housing prices, average living spaces and etc.

The high-income level of the market-rate is easier to estimate because the market housing prices in the inner city are much higher than the city's average level. In 2005, for example, the housing prices within the second ring road ranged from ¥7,500-12,000 /m², which are 1.46% to 62.33% higher than the average price of ¥7392/m² (Jiang and Li 2005). Thus, it is reasonable to assume that most of the market housing owners belong the high-income groups (>120% AMI) and a small portion of them are from the top section of the moderate-income group (80-120% AMI).

Although the income composition of the relocated households is more complicated, several facts suggest that the displaced households mostly belong to the low-income group (50-80% AMI), and a small portion of them are from the top section of the very-low-income group (30-50% AMI). First, before the dilapidated housing renewal, the living area per capita in the old houses was between 5 m² and 7 m², compared to the city's average living area of around 12 m². Second, according to Qingyu Ma's research in 1999, 49.5% of Beijing's urban poor lived in those single storey dilapidated houses of the inner city. Third, quite a number of the resettlement units are leased to migrant workers, who also belong to the low income tier. Meanwhile, other clues suggest that the on-site relocated households are not extremely poor. Although the resettlement housing is sold at subsidized price, it still costs approximately ¥200,000 to own the new unit due to the area discrepancies (Hao 2002). This sum is beyond the affordability of extremely poor
households. Based on the analysis above, it would be safe to assume that most resettlement households have 60%-70% of AMI.

The income composition in MRCHC can be expressed by the pyramid diagram below:

2.1.3 Design and Construction Quality Differentiation

The market-rate housing and resettlement housing contrast strongly in terms of design and construction quality. Since the price of resettlement housing has been regulated at a lower level, developers are highly motivated to minimize the cost of this part of housing. The most effective way is to densify the housing as much as possible, so that larger land area can be saved for more profitable private developments. This trend has resulted in the typical physical form of resettlement housing—high-rise point building of footprint area over 1,000 m². On each floor, 6-15 units are attached to the elevator core in the center. In this way, the units do
not have through ventilation and enough natural light; and a large portion of them
do not face south, which is considered to be a necessary advantage in Chinese
housing convention.

Figure 4. Typical building layout of the resettlement housing in Fuguiyuan: point tower with 12 units
attached to each elevator core. (Author 2008)

Targeting the high end of the market, the design quality in the market housing
sections has to meet higher standard. Slab buildings are adopted as the major
physical form of the buildings. Each elevator core serves 2 units each floor. This
layout allows cross ventilation through the unit. Each unit has south exposure as
well.
2.2 Summary
MRCHC is a special prototype of mixed-income housing in the special context of old housing redevelopments in the major cities of China. The boundary between the housing types and income tiers is greatly emphasized by the disconnected design processes and differentiated design and construction quality. The clear separation makes it difficult to properly distribute the common goods between the market-rate section and the resettlement section. As a result, most of the MRCHDs are suffering from disputes and estrangement between these two groups of residents.

The debates among the market-rate and relocated residents are now mainly regarding the usage and the management of estate-level facilities and amenities. As one major category of the common goods, estate-level facilities involve the residents’ daily life and bear on their immediate personal interests. The next chapter will examine the quality of estate-level communal facilities provision and management, as well as how the quality affects the social interaction in MRCHCs.
In most MRCHCs, the communal facilities and amenities are designed to be shared between the market-rate and resettlement sections. After moving in, property owners’ will hire management companies to maintain these facilities. The operating cost comes from the maintenance fee paid monthly by residents.

Successful communal facilities and amenities should not only satisfy the dwellers’ basic need for recreation, service and utility, but also help to promote positive social connections in the neighborhood. To reach these two goals, first, adequate facilities should be equipped and be well maintained after being put into service. Second, when involving different income groups, how to distribute the benefit and operating cost between them. In order to examine how different sectors in facility provision and management affect the quality and neighborhood relationship in MRCHCs, four cases will be analyzed and compared in this chapter. After a brief introduction to each case, this chapter will evaluate the quantity of facilities provided, the quality of the maintenance after put into use and the neighborhood relationship between the market-rate and the resettlement sectors in each case.

3.1 **Case Introduction**

3.1.1 **Case Selection**

The four selected cases are:
- Case 1: Dushixinyuan
- Case 2: Glory City
- Case 3: Fuguiyuan
- Case 4: Benjiarunyuan

These four cases are located in Chongwen District, one of Beijing’s four central administrative districts. Chongwen district was dominated by dilapidated housing because it used to be where the urban poor concentrated. By the year 2000, the area of old dilapidated housing in Chongwen was as high as 2,180,000 m², taking up 70% of its total housing area (Bai 2003). The redevelopment in Chongwen has met with tremendous difficulties because of the high population density in the dilapidated area, the substantial demolition cost and the limited housing purchasing power of the residents.

Due to the rise of Chongwenmen Business Area and the improvement of the municipal infrastructures since the mid-1990s, the market for high-end housing started to mature. Fuguiyuan was the first successful high-end apartment estate in Chongwen District. Afterwards, more and more developers realized the increasing land value in this part of the city and devoted themselves to the old dilapidated housing renewal projects in order to obtain land for private developments. By 2006, 26 dilapidated housing renewal projects had been finished in Chongwen. (Beijing Chongwen Statistic Bureau 2006) Glory City is the most recent one.
The close proximity of these four cases ensures the researched factors can be compared in a similar context. These cases are smoothly connected to the second ring road, the most central city express way. The shopping center of Chongwen district located right between the Dushixinyuan and Glory City. Other major city infrastructures around include the Beijing Railway Station and a linear park built out of a segment of the old city wall sitting to the north of the cases.
3.1.2 History and Program

Table 1. Site area, FAR, and residential area of selected cases

<table>
<thead>
<tr>
<th>Case</th>
<th>Site Area</th>
<th>Floor Area Ratio</th>
<th>Residential Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dushixinyuan²</td>
<td>11 ha</td>
<td>2.9</td>
<td>280,000 m²</td>
</tr>
<tr>
<td>Glory City³</td>
<td>22 ha</td>
<td>3.6</td>
<td>500,000 m²</td>
</tr>
<tr>
<td>Fuguiyuan⁴</td>
<td>18 ha</td>
<td>3.3</td>
<td>340,000 m²</td>
</tr>
</tbody>
</table>


Dushixinyuan was developed by Beijing Xinglong Property, started in October 2001. 3,100 subjected households were replaced; and the total demolished area reached 55,000 m². The unit sizes range from 54 m²-120m² (Beijing Xinglong Property "Beijing Xionglong Property Home Page" 2004). Now about 70% of the site area is taken up by mid-rise residential buildings of 5-6 floors.

Figure 8. The old neighborhood before the development of Dushixinyuan (Beijing Xionglong Property "Beijing Xionglong Property Home Page" 2004)

The old house demolition of Fuguiyuan was launched in June 2001 by Glory Property. 80% of the houses in the renovated area were designated as dilapidated houses. After the new housing compound was finished in July 2003, 1,920 displaced households moved back. The average living area rose from 6.6m²/capita to 21.8m²/capita (Bai 2003). This case was labeled by the district government as a successful model of on-site relocation for its good amenity package and communal facilities, before the market-rate and resettlement sections were separated.

Glory City was also developed by Glory Property later in 2003. Sitting at the intersection of two major roads, this project is more targeted at commercial developments, high-end apartments and shopping malls.
Benjiarunyuan was built out of the old neighborhood named Jiaowan. In this project, 2,100 households were replaced. The whole renovation process lasted from early 2003 to April 2005. 1,700 households moved back to the resettlement housing. According to the demolition company’s report, before the renovation, this neighborhood had a great number of laid-off workers, disabled persons, households relying on subsidy and drug addicts (Fang 2006).
The new Benjiarunyuan is more mixed-used compared to other cases. The developer, Beijing Jiuding Property, also rebuilt the Guangqumen Middle School in the old neighborhood. This project also hosts commercial program consisting of one shopping mall, two office towers and moderate ground floor retails.

3.1.3 Demolition Compensation and Housing Prices

According to the Implementing Measures of Accelerating Urban Dilapidated Old
Housing Renewal in Beijing issued in March 2000, the resettlement housing is priced at two levels depending on the area discrepancies between the old and the new properties. The area no larger than the old property can be purchased at the cost price, which is normally around ¥1,500/m². For the exceeding part, there are bonus areas of another 15 m² for each person of a replaced household, which can also be purchased at the cost price. The rest of the area has to be purchased at the affordable housing prices. Referring to the market level, the cost price and affordable housing standards are negotiable between the developers and PRDRs. (Beijing Dilapidated Housing Renewal Office "Implementing Measures for Accelerating the Dilapidated Housing Redevelopment in Beijing" 1999) An on-site interview shows that the affordable housing prices range from ¥4,700-¥4,900/m².

Figure 14. Compensation method for on-site relocation (Author 2008)

The prices for market housing in the studied cases are much higher than the Beijing average level. The prices could be approximately 78% higher than the city average level in 2004 and 2005. Although later, as real estate market in outer fringe rose, the contrast was not as strong; the prices in the selected cases were still 20-24% higher than the average. This big gap well illustrates that the market
property owners in the area tend to cluster in high-income group.

Figure 15. Market housing prices and Beijing average level (Sina 2008)

Table 2. Percentage above the Beijing average housing prices (Author 2008)

<table>
<thead>
<tr>
<th>Years</th>
<th>Fuguiyuan</th>
<th>Glory City</th>
<th>Benjia Estate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>70.20%</td>
<td>Not built yet</td>
<td>78.11%</td>
</tr>
<tr>
<td>2005</td>
<td>75.46%</td>
<td>78.44%</td>
<td>42.75%</td>
</tr>
<tr>
<td>2006</td>
<td>36.49%</td>
<td>36.49%</td>
<td>25.11%</td>
</tr>
<tr>
<td>2007</td>
<td>14.58%</td>
<td>52.78%</td>
<td>45.83%</td>
</tr>
</tbody>
</table>

3.1.4 Mixing

In all these four properties, resettlement housing takes up greater proportions than market-rate housing. The four cases have different levels of integration between market-rate and resettlement housing.
Table 3. Composition of market-rate units and resettlement units

<table>
<thead>
<tr>
<th>Case</th>
<th>Mixing Level</th>
<th>Market Units</th>
<th>Resettlement Units</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dushixinyuan</td>
<td>No mixing</td>
<td>0</td>
<td>2011(^6)</td>
<td>100%</td>
</tr>
<tr>
<td>Glory City</td>
<td>Building</td>
<td>700</td>
<td>2648</td>
<td>79.1%</td>
</tr>
<tr>
<td>Fuguiyuan(^7)</td>
<td>Cluster</td>
<td>921</td>
<td>1920</td>
<td>67.6%</td>
</tr>
<tr>
<td>Benjiarunyuan</td>
<td>Cluster</td>
<td>750(^8)</td>
<td>1734</td>
<td>70%</td>
</tr>
</tbody>
</table>

Dushixinyuan is a pure resettlement housing community, without any market-rate units.

In Glory city, the two types of housing are mixed between cluster level and building level. The market-rate buildings were arranged on the west part the site, while the resettlement housing was located on the east part, these two sections were integrated in the middle part and together enclosed the two public plazas in the middle section of the property.

In Fuguiyuan, the resettlement housing and market housing are mixed by clusters. The market-rate cluster takes up the central plot of the site, while the resettlement

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\(^7\) The information of Fuguiyuan comes from Yanlong Bai, "50,000 Beijing Residents Moved out of Old Dilapidated Houses," *Star Daily* 2003.

\(^8\) Benjiarunyuan.
buildings were located along the west and south edges of the site. The original site plan aimed to tie the two groups of residents by scattering the public amenities and facilities in the public open spaces across the site. However, the market section and the resettlement section were separated as two independent neighborhoods because of the disputes on sharing the facilities. The facility and amenity package was divided into two parts as well.

The market housing and resettlement housing were designed as two independent sections in Benjiarunyuan estate from the very beginning. They are both gated and have independent amenity packages. They even have different names, like two separate estates. The market section was named Benjiarunyuan, while the resettlement section uses the name of the old community-Jiaowan.

Figure 16. The integration between market housing and resettlement housing in the four cases. (Author 2008)
3.2 Provision of Estate-Level Facilities

3.2.1 Criteria

The quality of the estate-level facilities is evaluated by measuring whether the provided components meet the requirement of National Residential Design Code. The quality and quantity of facilities of the cases are obtained by the author’s on site observation.

According to the national residential design and planning code, housing communities with the population scale between 10,000 and 30,000 are to be supplied with the following facilities and amenities catering to residents’ daily use:

- Health Care: Medical Station
- Education: Preschool, Kindergarten
- Recreational Facilities: Recreation Center, Outdoor Exercise Facilities
- Service: Community Service Center, Parking (Car and Bicycle)
- Open Spaces: Public Plaza, greenery between buildings, and greenery next to buildings (Ministry of Construction, China "Residential Building Code" 2006)

As old neighborhoods in the center of the capital city, the surrounding area of the studied cases has matured educational, health care and community service network. For instance, within the 2 km distance of the researched area, there are six primary schools, ten middle schools, five hospitals and a number of medical stations. Therefore, most new housing estates do not have to furnish the compound with primary schools and medical center. Only recreational facilities, service facilities and open spaces need to be provided by developers.

The National Residential Planning Code also regulates that the greenery coverage ratio should be above 30%. A complete open space system consists of public plaza, greenery between buildings and greenery next to buildings. Public plazas are supposed to be located at the physical center of the sites and be used for meeting and group exercises. Flat ground, regular shape and adequate area will best serve these purposes. The greenery between buildings provides a second and more intimate level for the residents’ outdoor activities. Greenery next to buildings is used as a buffer between the indoor and outdoor spaces to keep the visual privacy of the ground floor and decorate the entries. In high-end projects, this type of greenery can also be designed as patios or backyards of the ground

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9 Greenery coverage ratio: the percentage of the outdoor area covered by greenery or water (including roof greenery) in the total site area of a project.
floor units.

3.2.2 Evaluation

The following table summarizes the observation of facility and amenity packages from the site visit. Service facilities all meet the regulation. Greenery coverage ratios all reach the 30% basic standard. The missing parts are the recreation facilities and some components of the open space system. The quality and design of the provided facilities vary in each case.

Table 4. Conformance of the facility and amenity packages to the basic national regulation
(Author 2008)

<table>
<thead>
<tr>
<th>Case</th>
<th>Recreational Facilities</th>
<th>Service Facilities</th>
<th>Greenery Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Recreation Center</td>
<td>Outdoor Exercise</td>
<td>Community Service Center</td>
</tr>
<tr>
<td>Dushixinyuan</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Glory City</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Fugui</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Benjia(M)</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Benjia(R)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Dushixinyuan is provided with very limited communal facilities and amenities. Through the site visit, it is found that no recreational or sport facilities are installed in this community. A small amount of retail is scattered across the site, which can not even satisfy the demand from the neighborhood.
Due to the inclusion of high-end apartments, Glory City is furnished with a decent facility and amenity package. It has two play grounds and a club house of over 3,000 m². The outdoor spaces mainly consist of two public plazas and couples of greenery between buildings. Sitting in the middle of the site, the two public plazas serve both the market-rate and the relocated residents equally well. Being used for merely one year, the facilities and amenities still remain in good condition. Through the interviews and site visits, it is learned that the people using the public plazas were primarily relocated residents. Most interviewees expressed their satisfaction with the facilities and amenities installed in this estate.

Developed by the same company, Fuguiyuan is equipped with an amenity package consisting of similar components with Glory City. Besides the playgrounds and the club house, there is an outdoor tennis court and two sets of outdoor exercise facilities. The club house has a spacious lobby that allows exercise even in harsh winter weather. The well-landscaped outdoor spaces also include two public plazas and couples of greenery areas, which are laid out in the similar way with Glory City. However, due to the division of the market and resettlement housing sections, both groups of residents can now enjoy only part the facilities and amenities. Most of the facilities now belong to in the market section. Only the north public plaza, which is designed with a terraced landscape and thick greenery, is left to the relocated residents. Thus, the relocated residents currently lack open spaces for group exercises, community activities and children activities such as scooting, cycling and running.

Figure 17. Facilities and amenities in the resettlement section of Fuguiyuan: the left pictures shows the north public plaza and the practice facilities in the resettlement section; the right one shows a girl riding bike on the path way due to the lack of playgrounds. (Author 2008)
The quality of facility provision in Benjia Estate is the best among the studied cases. The standard of the facility provision for the market-rate section matches its market scope of luxury apartments. The ground area is well landscaped and pedestrianized. A waterway links all the open spaces as one continuous system. The club house of over 3,000 m², a hosting gym, a swimming pool, and a sauna, serves the 750 households. Vehicular parking and circulation are organized in the basement.
The resettlement section of Benjiarunyuan is equipped with facilities of higher quality than normal resettlement housing compounds. Although no recreation center is provided, there are ample open spaces, greening areas and outdoor exercise facilities. A tot lot of 13,000 m$^2$ was provided as the buffer area of a historical site nearby—the memorial temple of a famed military commander of the Ming Dynasty. Plenty of exercise facilities are installed in the small park. During the site visit, several residents were seen using these facilities and walking dogs in the hush weather of December.

3.2.3 Factors

The comparison of the four cases suggests that private development, commercial program and historical site significantly affect the quality of facility provision in MRCHCs.

a) Private Development

The private development helps to provide high quality of communal facilities in MRCHCs. In pure dilapidated housing renewal projects, such as Dushixinyuan,
the low profit potential does not allow developers to perform any better than the design code’s requirement. When involving market-rate housing, the developers have to equip the compounds with amenity packages at a high standard to attract market-rate unit purchasers.

b) **Commercial Program**

The scale and type of commercial use are also closely related to the quality of facility provision. By calculating the proportion that the commercial use area takes up in the total area of the property, Benjigrunyuan has the highest commercial area ratio, followed by Glory City. These two estates have similar compositions of commercial uses. Besides the basic neighborhood retails, they both host shopping malls, offices, and high-end entertainment facilities. The commercial area ratio of Fuguiyuan is slightly behind Glory City, but the commercial facilities are more catered to the neighborhood’s daily shopping. Dushixinyuan has the smallest scale of commercial spaces, which can not even satisfy the demand from the community. The order of the magnificence and level of commercial uses in these four cases conforms to their ranking of the facility provision quality. It is understandable that the more profit the developers can make out of the estate, the more they are willing to devote to the constructions, including the provision of facilities and amenities.
Table 5. Scale and types of commercial uses

<table>
<thead>
<tr>
<th>Case</th>
<th>Total Area</th>
<th>Commercial Area</th>
<th>Commercial Area Ratio</th>
<th>Types of Commercial Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dushixinyuan10</td>
<td>320,000</td>
<td></td>
<td></td>
<td>Neighborhood Retail, Restaurants</td>
</tr>
<tr>
<td>Glory City11</td>
<td>800,000</td>
<td>240,000 m²</td>
<td>30%</td>
<td>Neighborhood Retail, Offices, Shopping Mall, Hotel, Restaurants</td>
</tr>
<tr>
<td>Fuguiyuan12</td>
<td>540,000</td>
<td>160,000 m²</td>
<td>29%</td>
<td>Neighborhood Retail, Super Market, Restaurants</td>
</tr>
<tr>
<td>Benjiarunyuan13</td>
<td>390,000</td>
<td>120,000 m²</td>
<td>31%</td>
<td>Neighborhood Retail, Office, Shopping Mall, Restaurants14</td>
</tr>
</tbody>
</table>

**c) Historical Site**

Good facility provision in MRCHCs also comes with the involvement of historical sites preservation. During the early years of the dilapidated housing renewal, without considerate legislation, developers used to wipe out the historical site to give way to new housing construction. As the city treasures diminished, the municipal government became concerned about the protection of the historical sites. Now it is regulated that the layout of the new housing compounds should avoid the special protected sites and their buffer zones. Typically, the buffer zones are design as tot lots serving the communities nearby. Hence, the large number of

10 The information of Dushixinyuan comes from Beijing Community Service -- Dushixinyuan Community.

11 The information of Glory City comes from Glory City Home Page.

12 The information of Fuguiyuan comes from Fuguiyuan Home Page.

13 The information of Beiingrunyuan comes from Benjiarunyuan.

historical sites and featured classic buildings in the inner city area could dramatically promote the improvement of the facility provision in MRCHCs.

### 3.3 Social Interaction between Market-rate and Relocated Residents

#### 3.3.1 Criteria

Healthy social interactions between the market-rate and the relocated residents must be established on the premise of eliminating discord. To evaluate the social interactions in MRCHCs between the market sections and the resettlement residents, this section first examines the common community organizations and activities, and then measures the degree of discord between the two groups of people by reviewing the discussion on controversial events in the estate web forums.

The estate web forums are reliable and direct source to research the interactions among residents. In face-to-face review, the residents were unwilling to talk about the negative interactions between the market-rate and resettlement sections, which were considered to be unpleasant and sanative topics. In the estate web forums, people tend to express their dissatisfaction and anger more freely. Therefore, all the controversial events between the market-rate and resettlement residents can be detected from the discussions on the forum, which has traced all the stories of the estates since they were occupied.

This part of the research will mainly focus on Glory City, Fuguiyuan and Benjiarunyuan, because Dushixinyuan does not involve mix between market
housing and resettlement housing.

### 3.3.2 Evaluation

Clear division between market-rate and relocated residents can be observed in all the studied cases. Actually, the relocated residents are excluded from the community by the market-rate residents. They are referred as "Huiqianhu" in the market-rate residents’ conversations and complaints. Besides indicated that they are relocated households, this word can be interpreted as people with low income, humble social status and less culture refined. The market-rate sections and resettlement sections usually do not share any administrative or community organizations. Consequently, they do not have common neighborhood activities. In some cases, these two groups of residents even have persistent and fierce conflicts.

In Glory City, the residents of began to suffer from the fierce debates about whether to separate the market and the resettlement sections shortly after they moved in at the end of 2006. According to the discussion on the estate web forum, in July 2007, inspired by a number of market-rate residents' appeal, the property manager set up a fence to isolate four of the market-rate buildings. This action immediately invoked the complaints from the relocated households. The reason was not only that they would be deprived of the usage of some amenities, but also that they considered this action as discrimination against their social and economic status. They sued the management company for renovating the property without the agreement from all owners. After three months, the municipal government finally decided for the relocated residents’ side and ordered the management company to tear down the fence. Immediately, on the forum, a group
of relocated residents raised a topic to celebrate for the triumph, while another topic, posted by a market-rate resident, only a few lines away claimed that if the fence was torn down, they would never pay a penny of maintenance fee. Though the fence issue has been settled, the debates still continue, and the discord between the market-rate and relocated residents has been exacerbated.

In Fuguiyuan, similar debates were settled by separating the market and resettlement sections. The layout of Fuguiyuan is easier for division. In addition, the relocated residents did not resist the proposal of separation as resolutely as those in Glory City.

In Benjiaruunyuan, the market section and resettlement section of are designed as two independent neighborhoods. Without sharing common goods, there have never been any disputes.

Overall, none of the studied cases has active social interaction between the market-rate and the relocated residents. They all tend to live in estrangement with each other. When sharing communal facilities, these two groups of residents even have disputes with each other.

3.3.3 Factors

The differentiated maintenance fees, uneven distribution of facilities, and the level of integration between the two types of housing together account for the ill neighborhood relationships in MRCHCs.
a) Differentiated Maintenance Fees

Taking the low income of the relocated residents into consideration, the government issued policies that set the price ceilings of the maintenance fee charged to them. The market level of residential maintenance fee is around ¥3.00 per month, while the controlled rate is approximately one-third to one-half of this level. The following table shows the fees charged in each of the cases.

<table>
<thead>
<tr>
<th>Case</th>
<th>Dushixinyuan</th>
<th>Glory City</th>
<th>Fuguyuan</th>
<th>Benjiarunyuan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Type</td>
<td>R</td>
<td>M</td>
<td>R</td>
<td>M</td>
</tr>
<tr>
<td>Maintenance Fee (¥/m²)</td>
<td>1.00</td>
<td>3.10</td>
<td>1.10</td>
<td>2.58</td>
</tr>
</tbody>
</table>

In spite of the government’s good will to relieve the low income residents’ living expenses, differentiating the maintenance fees without any public subsidy is not a sustainable model to guarantee that the relocated residents can enjoy good facilities and amenities. It is unfair to make the market-rate residents subsidize the relocated residents in operating cost for long term. Such policies with little consideration of fairness will eventually result in disputes and division between the two sections.

b) Distribution of Communal Facilities and Amenities

The location of the communal facilities is closely related to sense of belonging, and can further affect the residents’ manners of treating the facilities. To discuss the impacts from the distribution of facilities and amenities on the neighborhood
interactions, Glory City and Fuguiyuan are compared and analyzed, because only in these two cases, are facilities designed to be shared between the market-rate and relocated residents.

In Fuguiyuan, the facilities and amenities of are unevenly distributed between the market and resettlement sections. This compound is laid out with market-rate housing cluster in the center and the resettlement housing attached to it at the west and north peripheries. Most of the facilities and amenities, including the only club house, one of the public plaza and all of the greenery areas, are located within the market-rate section. Only the other public plaza and the tennis courts are included in the resettlement section. The pathways between the two sections further exclude the resettlement buildings from the central cluster.

Figure 20. Distribution of Facilities and Amenities in Fuguiyuan (Author 2008)

The uneven distribution of facilities and amenities results in different sense of
belonging and attitudes towards facility usage between the two groups of residents. On one hand, to the relocated residents, the open spaces are more like public tot lots close to their residence rather than parts of the neighborhood. They tend to feel less responsible for maintaining these amenities in good condition. They walked their dogs without cleaning after them. They stepped on the grass and littered in the public areas. One the other hand, due to the close proximity to the amenities, the market-rate residents not only feel that they have the ownership of these amenities, but also they were more directly affected by the improper usage of the facilities. They were so enraged by the negative behaviors from the relocated residents that they requested to separate the market and the resettlement sections, and they finally succeeded.

In Glory City, the facilities and amenities are more evenly distributed. The buildings were laid out in three sections: the west section, the middle section and the east section. The market-rate apartments are mostly arrayed in the west section, while the resettlement ones are mostly in the east section. The west and east sections both have their own greening areas and amenities. These two types of housing are integrated in the middle section, together embracing the two public plazas. The only club house is located on the ground floor of a market-rate building facing the north plaza. Both the market-rate and the relocated residents have equal accesses to the facilities. Therefore, the relocated households tend to treasure the amenities more than those in Fuguiyuan.
c) Level of Integration

The level of integration between the market-rate and the resettlement housing also significantly affects the social interactions between the residents. In mixed-income housing projects, more integration among different housing types is usually encouraged to promote more interactions between disparate income casts. However, in the case of MRCHC, while the financing and management structure still need to be improved; more thorough integration will exacerbate the discord because it stops the market housing and the resettlement housing from being separated.

In Fuguiyuan, the market housing and resettlement housing are mixed by clusters, so the debates on facilities can by settled by separating the market section and the resettlement sections, although the disputes have been replaced by estrangement.
In Glory City, the building-level integration makes it impossible to completely separate the market and the resettlement sections. Two market-rate buildings in the middle of the site are now isolated from other market-rate apartments. In this case, the whole community has to continue sharing the amenity package with quarrels and discord.

![Figure 22. Different level of integration in Glory City and Fuguiyuan (Author 2008)](image)

3.4 Quality of Facility Management

3.4.1 Criteria

The quality of property management can be judged from the number of the residents' complaints regarding the services. In China, the services of property management typically consist of:
- Environment Maintenance: Cleaning, Gardening and Garbage Collection
- Facility Repair
- Security Guard: Door Watching, Access control system, Patrolling
- Parking Management (bicycle and vehicle)
- Utility management: Elevator operation, Supply control of heating, air conditioning, water, electricity and gas

The residents’ satisfaction with the facility management will be measured according to these categories.

The information to evaluate the degree of satisfaction is mainly obtained from posters complaining about the management services on the web forum of each neighborhood, and facilitated by author’s observation during the site visits.

3.4.2 Evaluation

By counting the number of posters complaining on each category of services on each estate website forum, I summarize the degree of satisfaction on the facility management as shown in the following table. The darker the color, the more unsatisfied the residents feel.
In Dushixinyuan, the residents are more concerned about the basic management services, such as environment sanitation and facility repairs. Although the property is managed with relatively a low standard, the residents seldom complain about the security issue or the parking management, in spite of the free entry into the estate and the inadequate parking spaces. Most complaints are about the late responses to facility repair requests, as well as the poor environment and hygiene condition. For instance, the landscapes are not well maintained.

In Glory city, the residents are unsatisfied, even irritated with the property management. Parking problems are the most frequently complained on the web forum. Due to the lax control of car access, the ground parking lots are often taken.

The number was obtained from the web forum of each estate from the web site of...
up by the vehicles commuting to the shopping mall one block away. The poor environmental hygiene in the housing estate is harshly blamed as well. The cleaning of the public spaces and the garbage collection are not carried out frequently enough. The basement parking spaces are seldom cleaned. Pictures illustrating the poor sanitary condition in the open spaces are often posted on the forum. In addition, the residents are dissatisfied with the loose access control into the housing compound. According to the site visit, although a lookout poster is set up at each entrance, the security guards do not check the identity unless the entering people's behavior or appearance is highly suspicious. In the resettlement buildings, all the automated entry card systems are not functioning, which allows free entry into the buildings. Several thefts were listed on the forum as the evidences of the weak security. In terms of utility operations, unstable heating supply, frequent malfunctions of internet are frequently reported.

Figure 24. Pictures posted in the web forum of Glory City illustrating the poor environment maintenance service: The right picture shows two overfull garbage bins in a public walkway; the left one shows the disordered bikes in the lobby of one market rate building. (Focus Real Estate "Glory City Owner's Web Forum in Focus," 2008)

In Fuguiyuan, the most prevalent complaints fall in the category of utility management. Problems such as stopping water supply without conspicuous
notices were most frequently mentioned. The environmental hygiene maintenance is another problematic issue. The basement storage areas are suffering from severe sanitary condition due to the illegal leasing to migrant workers serving in restaurants or hairdressers nearby. The illegal leasing also causes the property owners’ anxiety about their security.

Since Benjiarunyuan is a high-class residential development, residents in the market housing section are generally satisfied with the management quality except for, the unstable utility supplement, which is irresistible in new estates with low occupancy rates.

In the resettlement section of Benjiarunyuan, most of the posters are posted to complain the environment sanitation. The open areas are delicately landscaped but not well tended. The residents do not treasure the open spaces either. Discarded furniture was seen dumped on the paths. Similarly with Dushixinyuan, residents are less concerned about the security and parking management and seldom complain about these two types of services. However, problems in these two categories were observed in the site visits. For example, the entry card system in some buildings was not functioning.

In conclusion, the degree of satisfaction with property management is highest in the market housing section of Beijia Estate and lowest in Glory City. The satisfaction level here reflects the correlation between the maintenance fees paid by the residents and the services they received, rather than the absolute quality of the property management.
3.4.3 Factors

As a relatively new field, commercialized property management has not grown mature enough to provide satisfied services. First, the community management is disconnected from the municipal administrative structure. In China, traditionally lacking of civil society, it is difficult for voluntary residential groups to form and sustain themselves. Second, obstacles in collecting maintenance fees have hindered the normal operating of property management. Most property owners are not used to paying for management service, which used to be provided by the working unit as merits under the old welfare housing mechanism. Moreover, rejection to pay fees is considered as the most effective way to push the property managers when the residents feel satisfied with the quality of management. Third, most management enterprises are immature in management skills and knowledge. Forth, the legislation in property management still needs improvement.

In addition to the influences of these defects, two major hurdles in MRCHCs are hindering the property management: the lack of homeowner committees and the discord between the market-rate and resettlement residents.

a) Absence of Homeowner Committees

The absence of homeowner committees makes the communication between property managers and property owners difficult. The ownership scheme of each housing estate is made up of two parts: apartments privately owned by individual households and commercial spaces owned by large entities. Facing the
dispersion of ownerships, homeowner committees are introduced to collectively present the interests of all owners. The board members, typically 5-9 people, are elected from out of the owners to look after the physical aspects of the property. The responsibilities of homeowner committee include:

- To hire or discharge property management companies, to sign contract with the selected management enterprises.
- To review the property management by-laws and the community rules.
- To audit the finance statements, working plans and charging methods from property managers.
- To organize and intermediate property owners’ meetings.
- To hear opinions and receive demands from property owners.
- To facilitate and supervise the operation of property management. (State Council of People’s Republic of China "Property Management Regulations" 2007)

However, the role of homeowner committees is often missing in MRCHCs. In spite of all owners’ desire for establishing the committee; very few of them would volunteer to take over the responsibilities. In some cases, the communities have to pay the board members to encourage the residents’ participation. However, when the aspiration of getting paid exceeds the responsibility to serve the community, the committees turn out to be incompetent. For example, in Fuguiyuan, the homeowner committee of the market-rate section was founded on January 18th, 2006 after a long preparation and election period of two years. Donations from the residents were used to run the committee. Each board member is paid ¥2,500 per month from the capital reserve fund, which is paid by each property owner when they purchase the apartments. However, the board did not fully perform their
responsibilities. By July 2007, the board members had resigned their positions in succession. (Focus Real Estate Estate 2008) Now the committee exists only in name. The residents propose to reelect another committee board. The market housing sections in the other cases have not yet launched the election. Lacking of fund, the resettlement residents do not even attempt to found their homeowner committee. Without the help of owner's committees, property manage companies will have great difficulties in coordinating needs from various owners and in enforcing the community rules.

*Figure 25. Ideal Management Structure in China and the Missing Part (Author 2008)*

\[\text{Diagram of Ideal Management Structure in China and the Missing Part (Author 2008)}\]

**b) Discord between Market-rate and relocated residents**

The discord between the market-rate and relocated residents further bring down the property management quality. As mentioned earlier in this chapter, the market-rate residents and resettlement residents have some conflicts in sharing the facilities. However, they never bring the confrontation to the surface. Rather, they tend to ascribe all faults to the management companies. The residents simply insist that they deserve services that worth the fees that they have paid. When the quality of management does not match the market-rate residents' expectation, some of them refuse to pay the fees as warnings to the managers. Without enough
money to maintain the operation, the quality of management will keep falling. Even the relocated households refuse to pay the fees when they also feel unsatisfied with the management quality. Thus, the relationship between the residents and the property managers is flung into a vicious spirals; neither of them is willing to make the first step to resolve this dilemma. This is exactly what is going on in Glory city.

3.5 Summary
Successful estate-level communal facilities in MRCHCs should serve residents’ needs for recreation, service, and utility; as well as promote positive social connections between the market-rate residents and the relocated residents. Good provision and management together ensure that facilities can well serve the residents. Conflicts caused by the uneven distribution of usage right and operating cost should be eliminated to promote smooth relationships between the two groups of residents. The factors that affect the quality of facility provision, satisfaction with facility management and the neighborhood relationships can be summarized as Figure 26.

In successful housing projects, design and management should be considered together according to the social structure. In MRCHCs, where the residents are composed of people from different income tiers, thorough integration between market housing and resettlement housing cannot realize the blend between different income residents by its own. Without high quality management, the mix has even caused clashes between different income groups. Next chapter will explore estate management measures to coordinate the estate layouts, which attempt to mingle the market-rate and the relocated residents.
Figure 26. The decisive factors for current problems (Author 2008)
CHAPTER 4  FUTURE POTENTIAL FOR IMPROVEMENT

According to the evaluation and comparison in last chapter, MRCHCs seem to be stuck in a dilemma of whether or not to share the estate-level facilities and amenities between the market-rate and relocated residents. Before proposing the future potential improvements, this question should be answered first: Should the market-rate and the relocated residents share estate-level facilities and amenities in MRCHCs?

Mixed-income housing is designed not only to improve social equity and to eliminate concentration of poverty, but also to promote active social interactions, social networks, and emotional support among neighbors of different income levels. Although separating market housing and resettlement housing currently minimizes the clashes between the two groups of residents, it does not stipulate harmonious social interactions in the neighborhood and do not guarantee that adequate or well-maintained facilities and amenities can be shared by both groups of residents.

According to previous research, equal status of community facilities and amenities is a key precondition to establish harmonious neighborhood relationships between different income groups in mixed-income properties. It is necessary that interactions occur in situations of equal status, as some writing about mixed income situations suggests (Kleit 2005). "These claims are based on contact theory, which suggests that people of different backgrounds will be more likely to
interact if the two groups have equal-status interactions within a given situation, are able to work toward common goals, have inter-group cooperation, and have support from authority for positive contacts." (Allport, 1979; Pettigrew, 1998) Therefore, all potential improvements will be proposed based on the assumption of that the market sections and the resettlement sections should share common estate-level facilities and amenities in MRCHCs.

![Diagram](image)

In this chapter, successful management measures for MRCHCs in terms of fund raising and estate governance will be explored by reviewing previous mixed-income practices in U.S and Canada. The divergences and similarities of the context between the sample cases and the MRCHC cases will be compared in order to indicate the applicability of these measures.

### 4.1 Financing Tools

Financing tools aim to bridge the gap in the capability of paying maintenance fees
between the market-rate and the relocated residents. The estate-level facilities and amenities should be provided and maintained at a standard high enough to meet the expectation from the market-rate residents. The operating cost to obtain the satisfactory quality is usually beyond the subsidized residents' affordability. Other financial sources are needed to fulfill the gap, so that the subsidized residents can pay less money but still share high quality of common facilities with market-rate residents. Public subsidy, commercial leasing income, and cross subsidy are the three major types of sources applied in the U.S. and Canadian practices.

Figure 28. Financing sources are needed to bridge the gap between the market-rate and subsidized residents' capability to pay the operating cost of the shared facilities (Author 2008)

4.1.1 Public Subsidy

"A public subsidy usually refers to a provision of economic value by the government to a private entity for purposes beneficial to the public." (Corporation for Supportive Housing "Supportive Housing Development: An Introduction to Operating Financing" 2008) In mixed-income housing development, public subsidies not only play an important role in launching the projects by means of tax credits, subsidized loans, funds, grand, and etc., but also fund the low-income
groups in the provision and maintenance of communal facilities by means of operating subsidies. "Operating subsidies fund the amount of the deficit between rents and expenses up to the difference between the annual contributions paid the authority by the federal government." (National Association of Housing and Redevelopment Officials "The Public Housing Operating Fund" 2008)

To determine the level of subsidy to be provided, operating or rental subsidy programs specify the percentage of a tenant's income that can be used to pay rent, sometimes called the tenant portion, and determine what the market would bear for a particular size of rental unit in a particular locality, sometimes called the fair market rent (National Association of Housing and Redevelopment Officials "The Public Housing Operating Fund" 2008).

In U.S., Section 8 Program is the most well-known and widely available source of operating subsidy. Under this Program, tenants pay 30% of their adjusted income for rent and utilities. "HUD has also established other operating subsidy programs modeled on the Section 8 program, including the Section 8 Moderate Rehabilitation SRO Program and the Shelter plus Care Program." (Corporation for Supportive Housing "Supportive Housing Development: An Introduction to Operating Financing" 2008)

There are three types of operating subsidies: project-based, tenant-based and sponsor based. Project-based subsidies are attached to some or all units of a property. They are not movable as the tenants change. Tenant-based subsidies are attached to individual or family. Sponsor-based subsidy attaches to a specific housing sponsor, typically a non-profit housing developer or supportive housing provider. (Corporation of Supportive Housing 2008) Section 8 operating subsidies
typically flow from HUD to Local Housing Agencies (LHAs), also known as Housing Authorities, and from there to individual tenants, projects or sponsors.

In the case of MRCHCs, the exemption of land leasing fee only helps to improve the affordability in purchasing the property, but does not ensure the long term affordability in using the facilities. A similar mechanism with the operating subsidy could be established to fund the relocated households to share the estate-level facilities with the market rate residents. As relocated households privately own the units, they do not have the pay the rent. The smaller amount of subsidies would make fund rising easier.

4.1.2 Commercial Leasing Income
Leasing income from commercial uses in residential property can help to offset the operation cost of facility management.

When replacing public housing with new mixed-income development in Canada, increasing commercial spaces is considered as an important measure to serve the goal of "de-institutionized" the PHA properties, besides including higher-income residents, and selling the property.

In U.S., Community Development Corporations (CDC) has devoted great effort in developing community-based commercial use, especially in affordable housing projects. One major goal is to generate unrestricted income to support the services of the residents and neighboring the community(Eng 2003). "Generating revenue from commercial leasing can be used to offset costs for programs, operating
expenses, capital improvements, or other agency activities” (Stiefvater 2001). Commercial leasing income can stipulate both the short-term and long-term financial sustainability in the mixed-income properties.

In MRCHCs, it is also possible to use commercial leasing income to offset the maintenance cost of facilities. Typically, developer possesses the massive commercial spaces, such as offices, shopping malls and ground floor retails. Only some minor commercial spaces catered to the residents’ daily life, such as the club houses and extra parking lots, are collectively owned by the residents. Besides the rent from leasing these spaces, a small amount of income can be generated from posting advertisement in public areas of the compounds as well. However, without homeowner committees, the commercial income is collected and managed by the manage companies. They tend to treat the money as their income rather than fund for improving the facilities. Especially when the developer companies perform the property management, it is more difficult the separate this part of income from the major commercial income that belongs to the developers. In order to protect the commercial leasing income, homeowner committees should be established to manage income generated from the estate-owned public area.

4.1.3 Intra-estate Cross Subsidy

Rents or fees from higher-income groups can be applied to fund the low income residents in the operating cost, but they can merely serve as an ancillary source to public subsidy and commercial leasing income. Cross-subsidy can only work in certain cases, such as in tight housing market. “In theory, the rents or sales from higher-income units can be used to cross-subsidize the lower-income units, reducing the subsidy needed. This can take place through a variety of financing
programs and mechanisms. However, it generally requires a very tight housing market to achieve the high rents needed for cross-subsidization. There are probably only a limited number of markets where cross-subsidization can be accomplished consistently. " (Smith 2002). MRCHCs are set in the market condition that is required to apply cross-subsidy. The housing market in the inner city of Beijing is extremely hot due to the prime location. The desire to own properties in the inner city makes cross subsidy acceptable.

However, cross-subsidy is not free. The high-income residents should be endowed with higher priorities in using the facilities that are less related to their daily life or with higher positions in estate management in return. How to differentiate the fees and priority should be delicately designed to avoid debates on fairness.

4.2 Estate Governance
The current faulty management structure in MRCHCs calls for improvement in terms of election of committee board, composition of committee board, governmental/ non-profit intervention, and estate rule enforcement. Since each of these topics is extensive, this section will only indicate the directions for MRCHCs rather than explore the detailed measures.

4.2.1 Establishing homeowner committee
In MRCHCs, only if the market-rate and settlement sections governed by common homeowner committees can they mingle and live harmoniously in the same estate.
A well-structured homeowner committee is the fundamental factor for stable and high-quality estate governance, which will consequently ensure the management of the facilities to be properly carried out. In order to establish a reasonable constructed homeowner committee, first, the voting and governance right should be properly distributed between different income groups. Several indicators could be adopted to divide the voting rights. The proportion in the total household number is an inherent indicator. The income group containing more households has more decisive power in the neighborhood events. In addition, the proportion of individual property value in the whole estate can also be used to weigh of voting right. Second, a pluralistic composition of the resident committee will help to raise the capability in estate governance. The board members can be not only resident representatives from the neighborhoods, but also professionals experienced in housing governance from outside the communities, either from housing authorities or non-profit organizations. In MRCHCs, external forces are needed to promote or to lead the formation of homeowner committees.

4.2.2 Governmental and non-profit involvement

Governmental and non-profit involvement in the governance of mixed-income projects can considerably enhance the committees’ capability of estate management. Moreover, the involvement of external forces can intermediate between the residents and management companies, as well as between residents from different income groups.

In previous mixed-income housing practices, governmental involvement is carried out in two ways. First, governmental housing authorities, such as HUD, invest in the projects, so that they can participate in the management of communities as
partial property owners. Second, government officers are assigned or invited as board members of homeowner committees to guide the management operation. Because the units in MRCHCs are owned by individual households, the latter option is more applicable to the current situation. Now only the Street Branch Offices (Jie Dao Ban Gong Shi) -- the fundamental level of government administrative organizations—are performing some functions in supporting neighborhood governance. For instance, they are responsible for facilitating the establishment of homeowner committees and to coordinate between residents and managers in the absence of homeowner committees. However, they are usually incompetent for these jobs due to their massive service scopes and lack of skills in housing management. More professional and specific services from the municipal government are needed to facilitate the management of MRCHCs.

Non-profit involvement in mixed-income properties can be carried out in three forms: self-management by nonprofit owner, management by subsidiaries from nonprofit organizations, or direct management by nonprofit organizations (Diaz 2004). The non-profit section had been long absence in China until 1980. Even now, they are developing at a slow pace due to government scrutiny, weak funding base and immature skills. The current non-profit organizations have not developed strongly or extensively enough to support the neighborhood development. However, some government-affiliated organizations, such as the labor unions, which are organized based on the working units and take care of the workers social warfare business, have similar service scopes with non-profit organizations. Such organizations have the potential to play the role of non-profit section in supporting the development and management of MRCHCs.
4.2.3 Rule enforcement

Strict rule enforcement can regulate the residents’ behaviors of using the facilities and ensure prompt maintenance fee payment. In addition to competent homeowner committees, first, common norms should be cultivated in the estate to promote mutual monitoring among residents against rule violations. Second, punishment measures should be devised to prevent violations.

While the establishment of common norms can take a long time, the punishment measures can be learned immediately from condominium housing, which has similar ownership scheme with MRCHCs. In both cases, every person is the individual owner of his own department, and at the same time, the co-owner of the common property.

At the estate-level, punishment for rule violations should engage not only the residents’ economic interests, but also their governance power and reputation in the estate. Currently, in MRCHCs, penalty is the only punishment for delay in maintenance fee payment. Very few measures are carried out to enforce estate regulations. Besides penalty for the rule breakers, denial of the right to vote at general neighborhood meetings, suspension of services and shame sanctions are widely used in condominium housing to prevent the owners from violating the rules. Liens over the apartment of the default owner can be applied in the presence of serious finance arrears. The violation history can be attached to the default owners as stigmas that will hinder their future purchasing or leasing of properties.
When the rule enforcement measures fail to work within the community, ordinary court procedure or street branch offices should take over the cases and solve the disputes.

4.3 Applications of Improvement
Successful management in mixed-income housing usually involves synthesis application of different tools. Three cases are briefly introduced to illustrate how these tools work in different types of ownerships and income mixes.

4.3.1 Rollins Square
Rollins Square is an award-winning mixed-income and mixed-tenure housing project located in Boston’s South End. The estate is consist of 184 units, of which 40% are market rate condominiums, 40% are price-controlled condominiums for moderate-income households, and 20% are affordable rental apartments for households with very low incomes (Eddins 2007). One hundred and forty-seven of the units are condominiums owned by individuals; and the rest of thirty-seven are owned by Rollins Square Limited Partnership (Ibid). This property is managed by Maloney Properties, a for-profit firm specializing in affordable housing. It takes care of both the condominiums and the affordable rental units, but with separate management budgets for each.

Rollins Square has a condominium trust composed of 7 trustees, whom are elected by all the members to hire and contact with the property manager.

The developer of this project is the Planning Office for Urban Affairs (POUA), a
non-profit organization. They devoted significant effort towards establishing the governance structure, property management standards, and later towards balancing the governance duties and power between the equity partner and different groups of residents.

Beneficial interest is invented to determine the common expenses each household should pay and to weight effectiveness of each household’s vote in the trustee election. It is simply the percentage of the individual property value in the total development value (Ibid). In this way, the market-rate residents subsidize the low-income tenants in common expenses in return of priority in community governance. Although the process and standard of valuing individual property is complicated, the beneficial interest is considered to be reasonable differentiation indicator and accepted by most residents.

The rental units are additionally subsidized by project-based Section 8 Housing Assistance (Chan 2007), which helps to cover the gap of common expenses.
between the condominium owners and the rental housing tenants further more.

### 4.3.2 Harbor Point

Harbor Point is a 1,283-unit mixed-income rental development, successfully converted from the public housing of Columbia point. Among the units, 883 are market-rate, and the other 400 are subsidized (Schubert and Thresher 1996). Its amenities package contains a clubhouse, a fitness center, a pool, a waterfront park, and several child play areas.

*Figure 30. Site Plan of Harbor Point (University of Buffalo Library 1993)*
It is developed and managed by Corcoran, Mullins and Jenison (CMJ), "acting as agent for the Boston Housing Authority with full power to enforce the lease." (Roessner 2000)

The developer and Columbia Task Enforcement, elected out of the old Columbia Point tenants, split the ownership and decision-making duties. The community strictly enforces rules and follows up on those who are not in compliance with the rules and regulations.

The management of Harbor Point relies heavily on the various public operating subsidy sources:

- Section 8 project-based units
- Chapter 707 funds (a state program similar to section 8)
- SHARP funds (another state rental subsidy program) (Schubert and
4.3.3 Atkinson Housing

Atkinson housing, located in downtown Toronto, was converted from the previous public housing of Alexandra Park. "The belief was that by increased tenant control in the management of community, the residents felt safer and a healthier community would emerge." (Sousa and Quarter 2004) In 1992, a non-profit cooperative was established in the neighborhood. 80 percent of households were members of the co-op. The residents were consequently empowered with controls over: maintenance, tenant selection, security procedures, and the maximum rent charged to residents.

The cooperative's board is its legal authority and is responsible for developing and approving any by-laws or legal agreements. There are nine directors of the board, democratically elected by all co-op members. In order to overcome the residents' lack of knowledge and experience, the board appoints two non-resident advisors to facilitate the decision making process. The government also held comprehensive community development programs to train in the skills and knowledge necessary for maintaining the property.
CHAPTER 5 CONCLUSIONS

MRCHC is a special model of mixed-income neighborhood merging with the dilapidated housing renewal. Without the involvement of race issue, the mixed-income housing problems are more closely related to economic and social equality. Thus, the key to success is how to properly distribute the benefit from the common goods and the expenses of maintenance between the market-rate and the relocated residents.

The two major problems with the provision and management of estate-level facilities in MRCHCs are: first, the facilities are not well provided or not maintained in conditions good enough to serve the communities; second, sharing facilities has resulted in clashes between the market-rate and the relocated residents.

After analyze and compare the four cases of Dushixinyuan, Glory City, Fuguiyuan and Benjiarunyuan, this thesis has identified the factors that lead to the current problems in estate-level facilities provision, maintenance and relationships among the residents. To well serve the community, adequate and qualified facilities and amenities should be provided, and should be well maintained after put in use. Qualified facility provision is easier to obtain in the construction of MRCHCs. The high profit from market housing and commercial uses allows developers to equip the estates with the components required by the National Residential Planning Code. However, the residents are usually not able to use the whole facility package later, when the market-rate and the resettlement sections are separated to stop the disputes on sharing the facilities.
Meanwhile, the facilities maintenance has encountered a number of difficulties, including resistance in collecting maintenance fees, disconnection between project governance and municipal administration, and management companies’ lack of experience and skills. These problems widely exist in various types housing compounds. In MRCHCs, the poor maintenance quality is in particular exacerbated by the absence of homeowner committees and the discord between the market-rate residents and the relocated residents.

In most MRCHCs, the differences in economic and social status between the market-rate residents and the relocated residents have been exaggerated by the contrasts in design and construction quality, the result in that these two groups have little social interactions between each other. These two groups of residents exaggerated do not share any management or community organizations, therefore, do not have common activities. In some cases, the two groups of residents even have fierce disputes. The maintenance fee differentiation policy is the major cause for the clashes between the market-rate and the resettlement residents. It is unfair to make the market-rate residents subsidize the relocated households in the operating cost for long term. In addition, when the facilities are distributed to make the accesses for the market-rate residents easier, the relocated residents tend to less concerned about the condition of the facilities and to have more negative behaviors when using the facilities. Although through physical integration between market-rate and relocated housing can improve the spatial equality of the facilities and to promote more interactions among the residents; under current circumstances, the integration makes it difficult to stop the disputes by clearly separating the market-rate housing and resettlement housing.
Several potential improvements can be explored from previous practices in mixed-income housing. First, public subsidy should serve as the major source to bridge the gap of maintenance fees between the market-rate and relocated rates residents. Commercial leasing income and cross-subsidy can be ancillary measures to offset the operating cost. Second, measures have to be taken to improve the management structure in MRCHCs. Establishing common homeowner committee between the market-rate and resettlement section is a fundamental step to combine these two groups as one community. Indicators, such as value proportion and area proportion can be adopted to properly distribute the voting right among disparate income groups. A pluralistic structure of homeowner committee board, involving governmental and non-profit sections can improve the management skills of the committee, and as well as smooth the relationship between the residents and the managers. In China, although the government administrative power has been capable in supporting neighborhood development and management, the services are not professional and specific enough. Non-profit sector has not yet grown extensive and strong enough to support the community development. It is possible for some government-affiliated organizations with similar service scope to play the roles of non-profit organizations.

This thesis has identified the decisive factors that have led to the current problems regarding communal facilities in MRCHCs and indicate potential for improvement at the estate level. The implementation of these measures and tools should be based on more completed and effective development, subsidy and management mechanism at city and state levels, which calls for future research on:
- Device a complete public subsidy mechanism according to Chinese political, social and economic system. The current public subsidy sources, mainly land subsidy, should be extended to a more pluralistic system, which can support the subsidized residents in terms of purchasing the housing, rent, and operation cost.

- Cultivate the civil society. The estate management relies heavily on self-regulation, mutual monitoring and self-governance of the residents, which require the residents to be more concerned and responsible for estate public affairs.

- Develop the non-profit section to support affordable housing in China. The weak non-profit sector has to be strengthened to cover the blank field in supporting community development between the governmental section and the public section.

- Legislate for property management and neighborhood governance. Higher level laws are needed to back up the estate rules and to regulate the management enterprises’ operation.

These studies will facilitate the future development of mixed-income communities, which will keep growing in number as the social equality is more and more highly valued in China.
Bibliography


