

Reflections On "Demolition And Reconstruction On Site" In The Urban Renewal Context

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Abstract

Purpose: In response to the growing demand for the renovation of dilapidated houses within the context of urban renewal in China, this paper aims to propose recommendations for the new renovation strategy, "demolition and reconstruction on-site".

Research design, data and methodology: The study adopts a qualitative research approach to investigate the significance and suggestions for promoting "demolition and reconstruction on-site." The research design employs a case study methodology, examining four practical instances of "demolition and reconstruction on-site" from various cities. Data is collected through a review of existing literature, government documents, and field observations. Through comparative analysis of these cases within diverse urban contexts, the paper offers a comprehensive understanding of the strategy's implementation and outcomes. **Results:** The findings indicate that this strategy has been successful in improving housing conditions and ensuring safety, while also effectively encouraging resident participation and enhancing social governance in communities. **Conclusions:** In conclusion, the strategy represents a valuable approach to renovating dilapidated houses, particularly against the backdrop of limited land resources and the low-carbon transformation of urban construction. This paper recommends that with enhanced policy support system, planning coordination, public participation, and construction requirements, the strategy can be further optimized to meet the diverse needs of the renovation of old residential communities nationwide.

Keywords : Urban Renewal, Renovation of Old Residential Communities, "Demolition and Reconstruction On-site", Sustainable Development

JEL Classification Code: R21, R28, R52

1. Research Background

In China, renovating old residential communities has been an important issue of urban development in recent years. According to statistics, there are more than 170,000 old residential communities built before 2000 with outdated public facilities, involving hundreds of millions of people². At the end of 2015, the Central Urban Work Conference explicitly proposed accelerating the renovation of old residential communities and promoting the renovation work from 15 pilot cities to the whole country. In 2019, the Ministry of Housing and Urban-Rural Development, the National Development and Reform Commission, and the Ministry of Finance jointly issued the Notification on Renovation of Old Residential Communities.

The document emphasized that the renovation work should be incorporated into government-subsidized housing projects

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and provided policies of financial support. Since then, the renovation of old residential communities had accelerated on a national scale. In the past five years, around 220,000 old communities have been renovated, which has benefitted more than 38 million households (about 100 million people)³.

As the implementation of urban renewal and community construction was explicitly proposed in "the 14th Five-Year Plan" in 2021, the renovation of old residential communities was incorporated into the urban renewal plan. From improving the quality of interior space to upgrading the living environment, and then to optimizing the experience of urban life, this step-by-step process not only reflects the concern for people's lives but also shows the particular attention on the sustainable development of cities.

The most pressing task in the renovation of old residential communities is the renewal of dilapidated dwellings, which matters to residents' safety and constrains the development of cities. In the background of increasingly tight land resources and low-carbon transformation of urban construction, "demolition and reconstruction on-site" was proposed as a new mode to renovate dilapidated houses by demolishing and rebuilding them on original sites. More and more completed projects have proved that this mode is effective and worthy of promotion. By rebuilding houses on the same site, the living environment could be notably improved without occupying new land, which helps to avoid the unlimited sprawl of the city. More importantly, as residents' opinions were highly respected and adopted in those projects, they became more willing to participate in urban construction. It strengthens community cohesion and helps to establish the social governance model based on collaboration, participation, and shared benefits.

2. The Significance of Promoting "Demolition and Reconstruction On-Site"

2.1. Ensuring Residential Safety

The mode of "demolition and reconstruction on-site" is one of the most important strategies to solve the problem of dilapidated houses. At present, the renovation of old residential communities mostly focuses on replenishing facilities and enhancing buildings' safety through structural reinforcement or repairs. However, many dilapidated buildings are technically difficult to repair, or the cost of reinforcement is much higher than demolishing and rebuilding them. At the same time, most old buildings don't have complete dwelling units inside. Each household only has one small room and shares the bathroom and kitchen in the hallway. This kind of architectural layout not only fails to meet the current requirements of the fire safety rules but also doesn't satisfy residents' needs nowadays. In this case, "demolition and reconstruction on-site" provides a new way to renovate such old houses, which could not only completely solve the housing safety problem, but also significantly improve the living conditions by building complete units and enlarging the unit area.

2.2. Achieving A Win-Win Situation for Residents and the City

In the context of stock development, "demolition and reconstruction on-site" could effectively avoid the damage to cityscape and negative impact on the residents' original social relations brought by demolition and construction on a large scale. It helps to achieve a win-win situation for both residents and the city.

For the residents, new houses built at the original location provide them with better living conditions and enable them to use the same services and facilities nearby, such as schools, hospitals, shops, etc. At the same time, the familiar living environment and neighborhood relationship help to enhance community cohesion and the sense of social belonging. For the city, "demolition and reconstruction on-site" is conducive to protecting the cityscape and culture.

As a new construction project, it could appropriately supplement public facilities and optimize the spatial layout of the city without increasing the demand of land. Thus the "demolition and reconstruction on-site" is a positive way to stimulate urban vitality. From a social aspect, new facilities could enhance the value of space and create more employment opportunities, which helps to promote urban renewal and achieve an organic combination of economic, social, and environmental benefits.

2.3. Promoting Social Governance Based on Collaboration, Participation, and Shared Benefits

The "demolition and reconstruction on-site" emphasizes residents as the main body, which helps to promote residents' participation in urban construction and to achieve shared benefits. Unlike previous renewal projects relying on the leading of government and a single construction platform, the mode of "demolition and reconstruction on-site" makes residents, communities, designers, operators, and social subjects actively play their roles in every part of the renovation, including

soliciting opinions, discussing design schemes, raising funding and implementation. It not only improves residents' initiative to participate and the degree of satisfaction, but also contributes to a smooth implementation of reconstruction and creating more stable communities.

2.4. Promoting Green and Sustainable Development

As a small-scale organic renovation mode, "demolition and reconstruction on-site" has a positive effect on promoting green and sustainable development and achieving peak carbon dioxide emissions and carbon neutrality. The application of new materials, new energy sources, and new technologies in the rebuilding process could help to promote the development of green buildings. For example, by using C-MiC technology (Concrete-Modular Integrated Construction), the renovation of Building 8 at Huapichang Hutong in Beijing reduced 75 percent of construction waste and 25 percent of material waste compared with conventional construction methods, which has a significant meaning in energy conservation and environmental protection.

3. Practice Cases in China

At present, most projects using the mode of "demolition and reconstruction on-site" in China are old and dilapidated houses that were appraised as Class C4 or worse. Whether a single building or a community, the core objective of renovation is to ensure the safety of houses and provide complete dwelling units, not to increase the size of houses dramatically. The following four cases will explain the exploration of "demolition and reconstruction on-site" in various cities and the problems encountered in the process.

3.1. Building 05 at No.4 Huju North Road, Nanjing- The First Case of "Demolition and Reconstruction On-Site" Organized by Residents

Building 05 of No.4 Huju North Road, is the first reconstruction case of "demolition and reconstruction on-site" organized by residents, following the principle of "same location, same area, and same height". This two-floor building was built in the 1950s for staff of the Chemical Research Institute of Jiangsu Province, with a total floor area of around 1,800 square meters and 30 households. Before the renovation, the building was in an extremely dangerous situation with rotten floorboards and cracks on the walls. However, the government had no land expropriation or demolition plan for this plot, and the building could no longer be repaired anymore. In 2013, the residents discussed and decided together to demolish and reconstruct the building on the same site to solve the problem of safety.

According to the policy at that time, only buildings appraised officially as Class C and D in the Standard for Dangerous Building Appraisal could be demolished. So, in 2014, the residents visited many departments and finally got the appraisal result with Class C. It became the first step to carry out the demolition. In 2019, the government of Nanjing issued the Special Work Plan for the Elimination of Dangerous Houses in Nanjing to encourage autonomous renovation for dangerous houses that accord with urban planning and have construction conditions. This document provided further policy support for the project, and helped the residents got the construction permit in 2020. Then, the residents set up a working group to collect advice, clarify property ownership, and communicate with the government about all aspects of the project. The reconstruction was carried out by a government-appointed company, Nanjing Xiaguan Property Co., Ltd. According to requirements of the Special Work Plan for the Elimination of Dangerous Houses in Nanjing, the government and residents shared the expense of the construction with a ratio of 4:6. Although the size and height of the new building kept the same as the old one (see Figure 1), the house type and layout were both optimized. The new building has six units, and two households share one staircase in each floor, which ensures each household has both a southward room and a northward room. Three public activity rooms had also been added on the first floor to improve residents' public life.



Left picture (Zhang Yuyan, https://www.thepaper.cn/newsDetail_forward_26775793)
 Right picture (Wang Yu, <https://www.chinanews.com.cn/sh/2024/05-28/10224476.shtml>)

Figure 1. Comparison of the Building 05 before and after the renovation

With the commencement of the construction, residents encountered many conflicts when dealing with some specific matters. For example, as residents were not provided with detailed design plan before, different households had disputes about the layout when the construction already started. And because the cost was not fully assessed at the beginning, it increased more than once during the building process. It was quite different from what residents expected at first, which caused residents to object to pay the additional construction cost. However, the renovation of Building 05 is still an important exploration. The project fully demonstrated residents' will and their ability of self-governance. It also explored a feasible working method of "demolition and reconstruction on-site", which provided valuable experience for other projects.

3.2. Building 2, Majiapu No.68 Courtyard, Beijing –A Renovation of a Single Building with Additional Facilities

Building 2 of Majiapu No. 68 courtyard in Beijing is a government-led project with specific policy guidance and residents' participation. The building was demolished in November of 2023 and planned to be finished in 2026. The new building will not only provide complete dwelling units but also service facilities. Building 2 was a four-story tube-shaped apartment with 73 households built in 1977. It was owned by Fengtai Urban Renewal Group before the demolition. Most rooms only measured 15.7 square meters without an independent kitchen and bathroom. Because Building 2 was not eligible for reinforcement works, it had not been repaired until the government of Beijing issued the Opinions on the Reconstruction of Dilapidated Buildings in 2020. The document proposed that old and dangerous buildings could be rebuilt and expanded appropriately without increasing the number of households. In 2023, another document proposed specific guidelines on the operation and working process of replacing or rebuilding dangerous buildings, as well as the requirements of building scale. These two important documents pointed out a clear direction for Building 2.

The main purpose of "demolition and reconstruction on-site" is to ensure housing safety and provide complete dwelling units. The new building will have six floors above the ground and one floor underground, with a total height of 17 meters. The total floor area above the ground is 3,730.38 square meters. The new building will provide 90 living units for 73 households living in the old building and 17 households living in nearby bungalows (see Figure 2). The underground construction area is 664.65 square meters, including service rooms and small shops. Although it's only a construction of one single building, it supplies offices, shops, and community service space by adding the underground space. The renovation will not only provide convenience for the original residents but also for the other people living nearby, which made this project very worthy to be referred to.



Figure 2. The Area of Renewal in Majiapu No.68 Courtyard (drawn by the author)

The renovation of Building 2 was funded by three parts: the government, the residents, and the property owner. The property owner was responsible for the construction of the basement. The government and residents shared the expense of constructing residential areas with a ratio of 3:7 (see Table 1). After the renovation, this public-owned house will be converted to affordable housing. At this stage, the 11,114,900 yuan spent by the government will be transferred into the residents’ assets. Compared with the traditional mode-housing demolition and resident relocation, the government could save more than 120 million yuan (estimated based on the total floor area of 2,192.9 square meters before the reconstruction). The average payment of the reconstruction per household is 268,000 yuan. For residents who want to transform affordable housing into individual commercial housing, each household needs to pay 3% of the land-transferring fees. Based on the housing price in this area, 56,190 yuan per square meter, each household could obtain a new flat valued more than 2.2 million yuan by paying 268,000 yuan (take the smallest size of house type, 40.9 square meters, as an example).

Table 1: Composition of the funds for the reconstruction of Building 2

Renovated area	Function	Funds and Sources	Building cost
Above-ground structures 6-floors	Residential housing 3730.38m ²	35,310,000 yuan	9,465 yuan/m ²
		Government: 11,114,900 yuan Residents: 24,195,100 yuan	
Underground construction 1 floor	Service, shops 664.65m ²	8,543,000 yuan Property owner (Fengtai Urban Renewal Group)	12,846 yuan/m ²

3.3. Zhegong Community of Hangzhou, Zhejiang- A Regional Renovation Led by Government and Funded By Residents

Zhegong Community is the first case of renovating the whole community by the mode of "demolition and reconstruction on-site". The community was built in the 1980s and located in a downtown area of Hangzhou. Even though the houses had been reinforced many times, a lot of buildings were still identified as dilapidated buildings of Class C. In 2015, the government proposed a renewal plan, but it was quickly resisted by most residents because the plan couldn't guarantee that all the residents

would be resettled on the same site. Moreover, according to policies at that time, there was no clear provision for implementer, approval process, or source of funding to demolish and reconstruct the buildings. In this case, the renewal plan was shelved. As more policies of urban renewal were released in 2023, the trend of stock development became clearer. The government promoted the renewal of the Zhegong Community again and published an implementation plan for the organic renewal of dangerous buildings. This time, the plan was agreed by all residents, and the community set up a renewal committee. The committee participated in all aspects of the renovation, including submitting applications, designing the layout, supervising construction, making rules, etc. Although the government guided and organized the whole renovation process, the residents of Zhegong Community were still the main body of the renewal.

The new plan for Zhegong Community is to change the original thirteen 7-floor buildings to seven 11-floor buildings, and the floor area ratio will be raised from 1.8 to 2.1 (see Figure 3). The vacated space will be used to build a community activity center with 1,500 square meters, more green space, and 460 underground parking plots. There are seven types of houses with different unit areas for residents to choose (see Table 2). For residents who don't want to invest too much, they can choose a house type with the same size as the original one and pay 1,350 yuan for each square meter. The residents with larger budgets could choose a house type larger than the old one, and the cost of the extra part is 34,520 yuan per square meter. The limit of the expanded area for each household is 20 square meters.



Left picture (https://news.sohu.com/a/751763388_558358) Right picture(<https://new.qq.com/rain/a/20240126A09LFL00>)

Figure 3. Comparison of the Old Community and the Concept Image of Renewal

Table 2: House types of Zhegong Community after the renovation

House type	A	B	C	D	E	F	G
Unit area (square meters)	117	106	98	91	81	76	65

Although there was no targeted policy or guideline for the reconstruction of the Zhegong Community at that time, the government still played a leading role in the whole process. All the departments actively participated in exploring working methods led by the government and finally adopted a working mode of "government leading, residents funding, market participating", which is very effective in the promotion of the project. This innovative mode was officially promoted in April 2024 and provided important practical experience for the government of Zhejiang Province to issue the Guidelines on Promoting the Independent Renewal of Old Residential Communities.

The investment from residents is vital for the smooth implementation. The overall cost is 530 million yuan, of which the government contributed 60 million, while the remaining 470 million was self-financed by the residents of 548 households. Each household contributed about 1 million yuan. The stable development and economic balance of the city are the reason that residents were willing to pay. Zhegong Community locates in a quite central area of the city, so the housing price in this region is higher than others. Compared to replacing a new dwelling in the same region, residents can get new houses with relatively low investment by demolishing and reconstructing the existing houses. For example, an old house with an area of 75 square meters can be replaced by a new one of 105 square meters with a parking space at a cost of about 1 million yuan. In comparison, the price of a second-hand house in the same region is 35,000 to 38,000 yuan per square meter. So, it will cost 3.5 to 3.8 million yuan to buy a 100-square-meter house, and the price of a new house is even higher. By increasing the floor area ratio, the community got more space to build public facilities for the elders, parking lots, fitness areas, and parks. The improvement of service facilities and residential environment is also positive feedback to residents' investment.

3.4. Fangualong Community, Shanghai –The Renovation of Plots Combination with Multi-Property Rights

Fangualong Community, which was transformed from a shantytown in 1964, is the first workers' community in Shanghai with 14 five-story buildings and around 1,122 households. The structure of the small beam and thin floor has already failed to meet the current housing safety requirements. The minimum floor area of a living unit was only 6.5 square meters, and each unit didn't have independent kitchen or bathroom. In 2023, the government of Shanghai issued the Management Measures for the Implementation of Demolition and Reconstruction of Shanghai's Old Dwellings. Fangualong Community became one of the pilot projects of "demolition and reconstruction on-site". The government coordinated the resources of different departments and set up a specialized working group at the district level, which was responsible for project proposals, funding, and supervision. At the subdistrict level, the housing renovation office was established to take charge of publicity, opinion surveys, and resolving contradictions around residents. All the relevant government sectors played a significant role in leading and coordinating through the whole process.

Fangualong Community locates in an important area that shows Shanghai's city image. To coordinate with the surrounding buildings' style, the original 14 five-story buildings will be replaced by 6 multi-story and high-rise buildings (see Figure 4). And new buildings will provide 8 types of floor plans to meet residents' various needs. Compared with other projects, the renovation of Fangualong Community is not limited to a single plot of land (see Figure 5). Surrounding plots and their development conditions were also considered in the renewal planning to meet the requirements of a 15-minute living circle. Several public facilities such as a community service center, a senior center, and a kindergarten will be constructed to form a high-quality complete community, that will benefit the original residents and neighboring communities. There are also 100 low-income housing units will be built in the renovation, which helps to alleviate the housing shortage in the city center. The reconstruction of the Fangualong Community provides an innovative approach to combine projects of "demolition and reconstruction on-site" with the renewal of adjacent plots, which is a very valuable experience for other large cities.



Left picture (Jiang Diwen, Tang Ye, <https://www.shobserver.com/statics/res/html/web/newsDetail.html?id=700508&v=1.3&sid=67>)

Right picture (<https://news.xinmin.cn/2023/11/12/32519946.html>)

Figure 4. Comparison of the Old Community and the Concept Image of Renewal

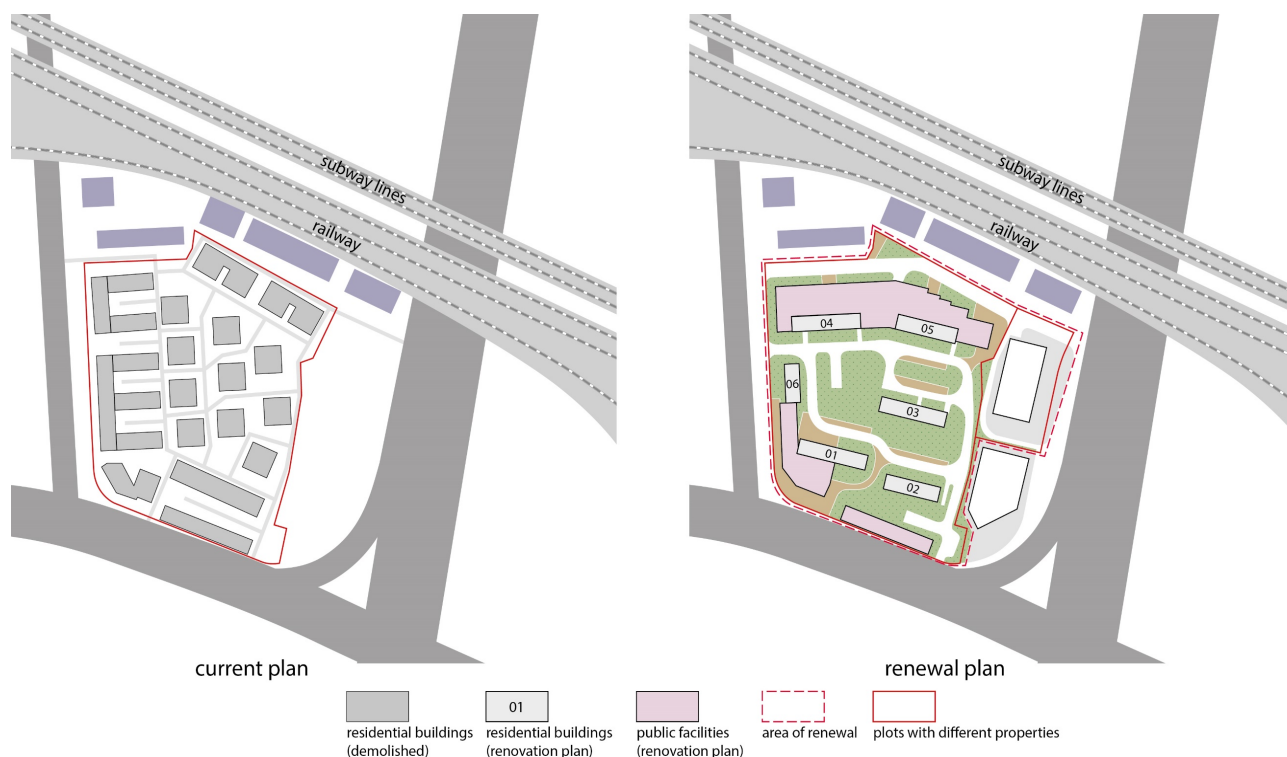


Figure 5. Comparison of old plan and renewal plan (drawn by the author)

3.5. Case Summary

At present, the works of “demolition and reconstruction on-site” are mainly carried out in super cities and super-large cities in China. Five cities (Beijing, Shanghai, Hangzhou, Guangzhou, and Shenzhen) have begun to promote the work of “demolition and reconstruction on-site” and issued policy documents or launched pilot programs.

Table 3: Comparison of works of "demolition and reconstruction on-site"

	Building 05 of No.4 Huju North Road	Building 2 of Majiapu No.68 Courtyard	Building 8 of Huapichang Alley	Zhegong Community	Pengsan Community, 5 zone	Fangualong Community
Name of city	Nanjing	Beijing	Beijing	Hangzhou	Shanghai	Shanghai
Range of renovation	single building	single building	ssingle building	community	community	plots with multi-property rights
Number of households	26	73	20	548	878	1,122
Construction era	1950s	1970s	1970s	1980s	1950s	1960s
If the property owner is the resident	yes	no	yes	yes	no	part of
Category of dangerous building appraisal	C	-	D	C	-	-

Organized by	residents	government	government	government	government	government
Policy support (during renovation)	yes	yes	yes	no	yes	yes
Residents' agreement on reconstruction	100%	100%	100%	100%	100%	100%
Composition of funding	government : residents - 40% : 60%	Government, property owner, and residents	government : residents - 60% : 40%	government : residents - 20% : 80%	government 100%	government, enterprise
New facilities	-	offices, shops	--	parking lot, senior center, parks	pparking-lot, canteen	community service center, kindergarten, health care center

3.5.1. Policy Perspective

Most works of “demolition and reconstruction on-site” are the continuation and supplementation of the renovation of old residential communities in various cities. The document issued by the government of Zhejiang Province in 2024, indicated that the renovated objects should belong to the certain category defined in the renovation of old residential communities of Zhejiang Province, and not be included in the plan of housing expropriation and resettlement. The document also indicated that the community should set up a renewal committee or authorize the owners' committee as the main body to organize and implement the renovation. Policies enacted respectively by Beijing and Shanghai in 2023, mainly focus on public-owned housings with non-complete dwelling units and stipulate the main body of renewal should be the property owner or a commissioned operating unit. The policies and working modes of Beijing and Shanghai could be referred to the renovation of public-owned houses with clear property owners in other cities. Meanwhile, Zhejiang's policy is more suitable for communities that locates in core area of large cities, which have relatively higher values. Since the housing prices in small and medium cities are low and houses' appreciation space is limited, if the government asks for residents to be the main body of renovation, their motivation is obviously insufficient.

To improve living conditions, policies in different cities have various requirements and incentives for increasing living space and adding public service facilities. According to the policy in Beijing, the area of the kitchen and bathroom that added in the reconstruction is about four square meters and three square meters respectively, according to relevant national and Beijing municipal housing design guidelines. The policy also requires the increment of gross floor area should not exceed 30 percent of the original area in principle. This policy has reference significance to the reconstruction of single buildings in cities that need to control the amount of urban construction. In Zhejiang Province, most projects determine the increment of living area and facilities by controlling the plot ratio of the overall scope of the community. At the same time, if the building interval, building face width, building density, and other indicators of the renewal plan cannot meet the current standards, the community could be renewed referring to the current conditions as a bottom line. The requirements of plot ratio and building standards are relatively more flexible in Zhejiang Province. Shanghai, on the other hand, gives more support from the policy of land use. The renewal project can expand its land area by integrating adjacent scattered plots that do not have independent development conditions, but the land use should be consistent with the main project. The incremental houses could be used as social housing or resettlement housing for residents in the same district. The policies of Zhejiang and Shanghai generally encourage increasing the amount of housing units, while control the plot ratio from a neighborhood range or urban perspective, which could be referred to cities with high housing demand.

The communities renewed by the mode of “demolition and reconstruction on-site” also pay more attention to the maintenance and management of buildings and the environment. The newly released policies of Zhejiang and Beijing both recommend introducing a standardized and market-oriented property management after the renovation. Beijing also proposed to establish property management for a single building to ensure its maintenance. These policies help to better maintain houses to avoid repeated demolition and construction, also encourage residents to take more initiative in housing maintenance.

In terms of the composition of funds, most projects require the government and residents to share the costs of renovation, but the financial support and assistance from the government could be very different. The government of Zhejiang provides a variety of financial support to residents who carry out the reconstruction works, including exemption of infrastructure

supporting fees, reduction of business service fees, and other financial relief. These measures could be referred to those well-funded local governments.

3.5.2. Residents' Feedback

One of the necessary conditions for the implementation of "demolition and reconstruction on-site" is the consent of residents, so most projects under renovation received positive feedback from the residents. In the previous three cases in Beijing, Hangzhou, and Shanghai, although the constructions have not yet been completed, the residents expressed that they are looking forward to moving into new flats and reuniting with old neighbors. Especially the residents of Fangualong Community in Shanghai, said that the facilities nearby will also become more complete, which makes it more convenient for them to buy groceries or go to hospital. However, in the case that had already completed in Nanjing, the relationship between neighbors became much worse. Two households even moved out of the community after the renovation. Since the residents were both the organizers and beneficiaries in the whole process, they often had conflicts on various issues involving their interests.

It is essential for the government to take the lead in carrying out the works of "demolition and reconstruction on-site". When residents have conflicts or disagreements, the government could provide various solutions from a fair and objective point of view, and make sure that most residents will be satisfied. For example, the Zhaohui subdistrict office in Hangzhou, held many communication activities to collect residents' suggestions and answer their questions, which helped to promote the reconstruction of Zhegong Community. For residents who have difficulties in renting houses during the transition period, the subdistrict office also found suitable financial institutions to provide financial support. The government of Jing'an District in Shanghai also organized staff to help residents rent houses and assist elderly people who live alone to settle down during the transition period. These measures not only contributed to the implementation of reconstruction but also gained popular support and recognition.

These cases showed that the government's guidance, residents' agreement, policy support, and co-financing are the key factors in promoting the implementation of "demolition and reconstruction on-site" projects.

4. Suggestions On Promoting Works Of "Demolition and Reconstruction On-Site "

Although many projects have been implemented in different cities, the work of "demolition and reconstruction on-site" still faces many challenges in various aspects, including reaching a consensus, fund-raising, and policy lagging. Firstly, a close consultation with residents is essential at several stages of the process, and a consensus must be reached before a project can proceed, but it's often difficult to achieve when residents have a conflict of interest. The second difficulty is to raise funds. At present, most projects need to be funded by the government, property owners, residents, and market financing. However residents have different economic strengths, and the market investment isn't motivated due to uncertain economic returns. So, the complex coordination of interests and incomplete fund management mechanism increases the difficulty in raising funds. The third problem is that current policies are lagging. The work of "demolition and reconstruction on-site" is still in an initial stage, and a complete policy and working system have not yet been formed. So, the promotion of the project may be bogged down by the lack of a policy basis.

The following suggestions are put forward to promote the works of "demolition and reconstruction on-site" from the perspectives of the policy guarantee system, coordination of planning, public participation, and construction requirements:

4.1. Improving The Policy System and Building a Working Platform for Multi-Participation

The work of "demolition and reconstruction on-site" is a complex construction work that involves the coordination and cooperation of many departments. In the face of the huge demand for renovation, the government should consider local differences, and form a complete policy system including law, funding, land planning, community governance, liability protection, operation, and maintenance. The coordination between different government departments should also be optimized to improve work efficiency. Local governments should summarize existing project experiences and transform them into an exercisable working mechanism, which will effectively guide the implementation of more projects.

For instance, in 2020, Beijing issued the Opinions on the Reconstruction of Dilapidated Buildings, which indicates definite regulations about the object of reconstruction, organization of implementation, policy of land planning, raising funds, and transfer of property rights. The reconstruction of Building 2 of Majiapu No.68 Courtyard and Building 8 of Huapichang Alley, were both promoted by this policy. In the case of Building 8 of Huapichang Alley, the district government of Xicheng District invited responsible planners to help residents reach a consensus and improve the reconstruction scheme, which effectively

pushed forward the implementation of the project.

4.2. Strengthening The Coordination of Planning, Achieving Financial Balance, And Stimulating Urban Vitality

The works of "demolition and reconstruction on-site" provide an opportunity to reexamine urban demands and arrange urban space. From the perspective of urban renewal, the planning of the reconstruction project should be coordinated at a macro planning level. On the premise of avoiding destroying the urban scape, vacated land and unused space should be fully utilized to supplement service facilities and public space, and to stimulate urban vitality. In the case of the Fangualong Community, the reconstruction broke the boundary of the community and achieved a financial balance on a large scale by integrating the planning and construction of the surrounding plots. In another urban renewal case, the Small West Lake neighborhood in Nanjing, designers implanted public service facilities in vacated spaces based on the willingness of residents. The renovation realized an intergrowth of private living space and public space, which made the neighborhood more active. At present, most reconstruction works of "demolition and reconstruction on-site" are limited to the plot itself, and the plot ratio and the height of new buildings are strictly controlled. These requirements restrict the supplement of service facilities and public space to some extent and affect the participation of market investment. In the future, implementation plans should find a balance between conservation and development, which will effectively attract market investment and promote urban renewal.

4.3. Strengthening Public Participation to Achieve Social Governance Based on Collaboration, Participation, and Shared Benefits

Because residents occupy the principal position in works of "demolition and reconstruction on-site", the consensus of residents and whether they could fund the construction are the keys to promoting a project. Public participation should be further strengthened in future projects. Only through deep communication with residents about their requirements, the renovation can truly meet residents' demands. The satisfaction of residents' requirements helps reach a consensus between different stakeholders and is the premise that residents are willing to invest in the reconstruction works. At the same time, to further strengthen the consciousness of community governance, the owners' committee can be set up to encourage residents to participate in the construction and development of the community. So, the residents will think the investment is necessary to reconstruct and maintain their own living space. The establishment of this consciousness is very important to promote works of "demolition and reconstruction on-site" and to maintain dwellings in a long-term.

4.4. Valuing Housing Maintenance to Achieve Sustainable Development

In the works of "demolition and reconstruction on-site", developers and designers should deeply understand the problems that residents are mostly concerned with, such as sound insulation, heat preservation, water leak, and pollution from building materials. Builders should actively explore the application of new methods, innovative technologies, and environment-friendly materials. The reconstruction of dilapidated buildings should be efficient and of high quality. More important, new buildings should meet new requirements of housing in terms of green, low-carbon, intelligence, and safety. After the reconstruction, residents and relevant departments should pay attention to the continuous maintenance of houses. By regular checking and solving problems on time, the service life of houses could be prolonged. This could avoid reduplicative demolition and construction in a short period and reduce the wastage of resources, which helps to realize the overall friendly to residents, city, and environment.

5. Conclusions

The renovation of old residential communities is an ongoing urban renewal activity that requires a broad participation of government, residents, markets, and a wide range of social sectors. In the context of stock development, the strategy of "demolition and reconstruction on-site" provides a new method for solving basic housing problems and improving the living quality of residents. Every relevant government department should deeply investigate residents' demands, support and guide them to carry out autonomous renovation of their communities, as well as provide policy support and legal protection. Besides,

the departments should also formulate acceptable and affordable renovation plans, build a working platform for multi-participation, attract social investment, and activate the market for urban renewal. As a new strategy of urban renewal, "demolition and reconstruction on-site" contributes to the sustainable development of cities and fully arouses the enthusiasm of residents, helping to realize social governance based on collaboration, participation, and shared benefits.

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Endnotes:

1. "Demolition and reconstruction on-site": a renewal strategy to renovate old and dangerous buildings by demolishing and rebuilding at their original sites.
2. Data source: https://www.gov.cn/xinwen/2019-12/30/content_5465176.htm
3. Data source: https://www.gov.cn/lianbo/bumen/202405/content_6952738.htm
4. Standard for Dangerous Building Appraisal: JGJ125-2016, issued on July 09, 2016, by the Ministry of Housing and Urban-Rural Development