

Supporting Strategies of the Public Service Facilities for 15-minute Community Life Circle in Shanghai Central City

Su Su, Shanghai Yingyi Urban Planning Design Co., Ltd., China

Abstract

The configuration of public service facilities is the core content of the 15-minute community life circle. While deploying public resources, Shanghai's central city is faced with complex demands, short supply, limited spaces, incomplete standards, and other problems. This paper innovates planning strategies from three dimensions: evaluation methods, configuration patterns, and configuration standards. In terms of the evaluation method, the real demands are obtained through cooperation and consultation, the objective demands are analyzed by wisdom means and translated in diversified paths. In the configuration mode, the method of sharing, compound, and preciseness is put forward. And in configuration standards, more comprehensive coverage is emphasized. Based on several cases, the paper also puts forward the implementation approach of facility configuration from the aspects of making good use of urban renewal policies, strengthening planning guidance, fulfilling delicacy design, and promoting interconnection and interaction.

Keywords

Sharing, Compound, Preciseness

1. Research background

As a megacity with a population of 25 million and over 45% developed land resources, Shanghai has entered the stage of urban renewal. The pursuit of higher-quality development and the construction of a global outstanding city has become the overall goal of Shanghai's future development. Community is the basic unit of urban development and social governance. The new round of the Shanghai 2035 Master Plan clearly states that Shanghai will build a "15-minute community life circle", one of the important goals of which is to improve a fair, shared, flexible, and inclusive basic public service system.

In 2016, Shanghai issued the "Shanghai Planning Guidance of 15-Minute Community-Life Circle", which proposed that Shanghai should take a 15-minute walk as the spatial scale, improve the service functions of living, employment, travel, service, leisure, and form a community life circle that is suitable for living, working, learning, traveling and nursing. Since then, Shanghai's 15-minute community life circle planning has roughly experienced the exploration phase from 2016 to 2017, the comprehensive pilot phase from 2018 to 2019, and the promotion phase since 2020. In this process, there have been several notable changes in community planning. It is changing from a passive action designated by the government to an active action of the communities themselves, from the residential communities to the compound communities, from government leadership to multi-party coordination, and from the overall system to the key special planes.

The configuration of public service facilities is the core content of the 15-minute community life circle, which is also the most concerned content of community residents and grassroots government. With the continuous and in-depth promotion of community planning, how to allocate resources scientifically and reasonably has become the key factor in determining the quality of the 15-minute community life circle construction and guaranteeing a sense of gain for the people.

2. Current Situation

Shanghai central city refers to the area within the outer ring, with a total area of 664 square kilometers. It is the main supporting region of Shanghai's global city functions. As the population is dense and the space is tight in the central city, one of the goals of the master plan is to actively promote urban organic renewal. Based on increasing green land and public space, the level of public services, regional employment, and the quality of urban space are highlighted.

The present situation of community service in the central city can be judged from the aspects of demand, supply, development space, and configuration standards.

The first is multiple and complex requirements. On the one hand, from the perspective of the demand of people, the needs of residents, employees, and visitors are different. The population composition of each community is also relatively different. Taking residents as an example, the elderly population in Jing'an Temple community accounts for more than 42%, about 27% of Hongqiao community residents are foreigners, and about 50% of Tianshan community residents are renters. These diverse population compositions lead to different needs of residents in different communities. And the needs of specific groups are also different. According to the survey of Jing'an Temple community, the local government needs to take into account the demands of elderly people in life care, medical rehabilitation, cultural, entertainment, security, spiritual comfort, legal aid and other aspects. All these real needs need to be met through community services. On the other hand, community management needs are also complex and diverse. Shanghai's grass-roots government, which is led by the subdistrict office, has a number of residents' committees, as well as several functional sections such as community affairs centers, community life service centers, and community comprehensive governance centers. In addition, the dispatched agencies of the urban management department, such as the police station, urban management supervision, housing management office, etc., also need to layout in the community. Different administrative management sectors have demands for staff offices and facilities. For example, a small neighborhood committee undertakes more than 20 service functions, and the needs of community management are corresponding to the needs of people.

Secondly, there is a shortage of supply. From the perspective of scale, the communities in the central city generally have a gap in the food market, elderly nursing, neighborhood committee, and other facilities. Although the new round of master plan has improved the layout of all kinds of facilities and met the needs, there is still a long process to implement the planning, and some facilities are difficult to implement in the near future. From the perspective of service radius, after years of construction, the 15-minute community-level facilities have been basically improved, which can better guarantee the basic needs of residents. However, the coverage of 5-minute neighborly facilities is insufficient, and there is still room for improvement in the quality of community services.



Figure 1. Analysis of Accessibility of Various Service Facilities in Ruijin Second Road Community, Huangpu District.

Thirdly, in terms of development space, the remaining spaces of the central city are limited and most of them are small and micro Spaces. So it is difficult to implement new development and construction because of the high construction rate. For example, the construction rate of Xinhua community and Hongqiao community in Changning District has reached 96%, and the construction rate of Jing'an Temple community in Jing'an District has reached 94%. The spaces available for public facilities are extremely limited. Although there are opportunities for urban renewal in some areas, these projects are restricted by owners' willingness, economic feasibility, policies and other aspects, and there are great uncertainties in improving facilities combined with urban renewal projects.

Finally, in terms of configuration standards, the current standards mainly refer to the 2016 Technical Guidelines for Shanghai Regulatory Plan (Revised edition), Shanghai Planning Guidance of 15-Minute Community-Life Circle (Trial version), the 2021 Spatial Planning Guidance to Community Life Unit, the Shanghai Action Guidelines of 15-minute Community Life Circle Planning (Exposure Draft) and other professional standards. By comparison, it can be found that compared with the national standard, the Shanghai standard has more complete types and more delicate standards. The minimum standard is generally higher than the national standard, and the configuration of large-scale facilities is relatively weakened. The development of the Shanghai standards themselves is also gradually refined, and some supporting standards have been improved. Other professional standards are complementary to the planning standards. Due to the differences among various standards, there is no comprehensive standard for reference when implementing community service, and some facilities have different standards or incomplete coverage. It is mainly manifested in the lack of standard of supporting services for the employees, the incomprehensive standard of grassroots administrative facilities, and the differences in categories and scales between planning standards and other professional standards.

Category	Facility Name	Type	Technical Guidelines for Shanghai Regulatory Plan(2016)	Shanghai Planning Guidance of 15-Minute Community-Life Circle(2016)	Shanghai Action Guidelines of 15-minute Community Life Circle Planning(2021)	Professional Standards		Spatial Planning Guidance to Community Life Unit(2021)	
			Standard Values	Standard Values	Standard Values	Standard Values	Standard Name	Type	Standard Values
Cultural and Educational Facilities	Community Cultural Center, Youth Activity Center	Basic Security	4500m ²			≥3500m ² , Central City≥2500m ²	Basic Configuration Requirements of Community Cultural Centers in Shanghai (2016)	Basic Security	Floor Area:3000-6000m ² , Land Area:3000-12000m ²
	Community School	Quality Improvement	1000m ² , if needed	1000m ²		--	--	--	
	Cultural Activity Room	Quality Improvement	100m ² , One for every 15,000 people	200m ² , One for every 15,000 people	≥200m ²	--	Basic Security	250-1200m ²	
	Parenting Care Point	Quality Improvement	200m ² , One for every 15,000 people		≥360m ²	≥360m ²	The Construction Standards of General Kindergarten(DG/TJ08-45-2005)	Quality Improvement	200m ²
	Cultural Plaza	Quality Improvement				--	--	Quality Improvement	1000-3000m ²
	Cultural exhibition hall	Quality Improvement				--	--	Quality Improvement	800-2000m ²

Table 1: Comparison of Configuration Standards, Take Cultural and Educational Facilities as an Example

Therefore, the central city of Shanghai is faced with many problems in community service support, such as diversified and complex demand, short supply, limited space, and incomplete standards.

3. Planning Strategies

3.1. Innovation of Evaluation Methods

The premise of rational allocation of resources is to find out the current situation and understand the needs of the community, so the evaluation method needs to be improved and innovative in community planning.

3.1.1 Cooperation and Consultation, Get the Real Demands

Through institutional guarantee, a community governance mechanism of cooperation and consultation should be established, to ensure that different groups can deeply participate in community development. At present, Shanghai has basically formed a set of 15-minute community life circle management mechanisms with the subdistrict office as the link, the 2-level joint meeting mechanism as the core, and the community planner system as the technical support. At the administrative level, the coordination within the government is strengthened mainly through the joint meeting system at the district level and the sub-district level. On the social level, an interactive mechanism between the government and the public is formed, which is connected by the subdistrict office. Discussion platforms are built at different aspects, such as the subdistrict office, neighborhood committees and residents' autonomous groups, to form smooth channels up and down. Community planners accompany the growth of the community for a long time, not only providing technical advice but also playing the role of coordinators.

In Xinhua Community, planners conducted a three-level survey on two major community groups, residents and employees. The first level was the investigation with the sub-district office which has a good understanding of the macro-level needs of the community. The second level focused on neighborhood committees and enterprise zone to find the specific area with key problems. The last level focused on individual demands through face-to-face interviews and questionnaires. Through the in-depth

investigation and mutual consultation of the government, enterprises, residents and employees, we can effectively find out the real needs and the urgency of various demands.

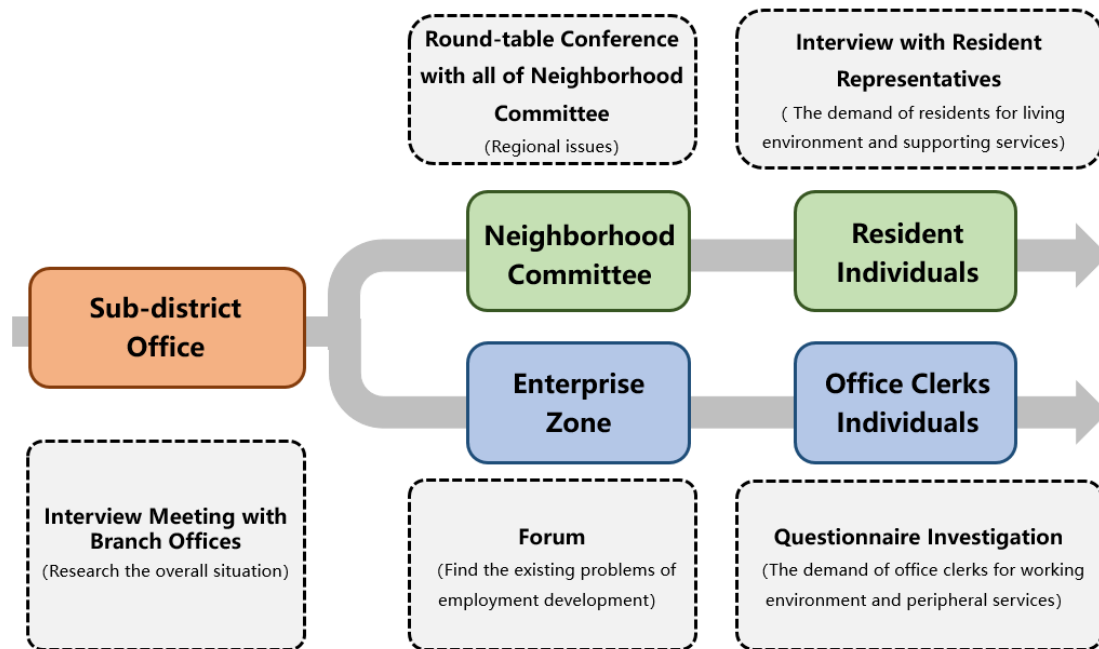


Figure 2: The “2 groups-3 levels” Research Method in Xinhua Community

3.1.2 Intelligent Method, Objectively Reflects Demands

Based on the traditional survey, collection, analysis and design, the assessment of community status further shifts to intelligent support means, that is, relying on intelligent analysis tools such as big data and artificial intelligence, to improve the efficiency of data collection and analysis, and assist scientific decision-making.

In the central city of Shanghai, the Community Smart Platform 1.0 has been completed. Through the platform, the service scope of existing and planning service facilities can be superimposed with the potential plots of urban renewal, and the community needs can be visualized on maps, so as to objectively reflect the community needs and fit different solutions.

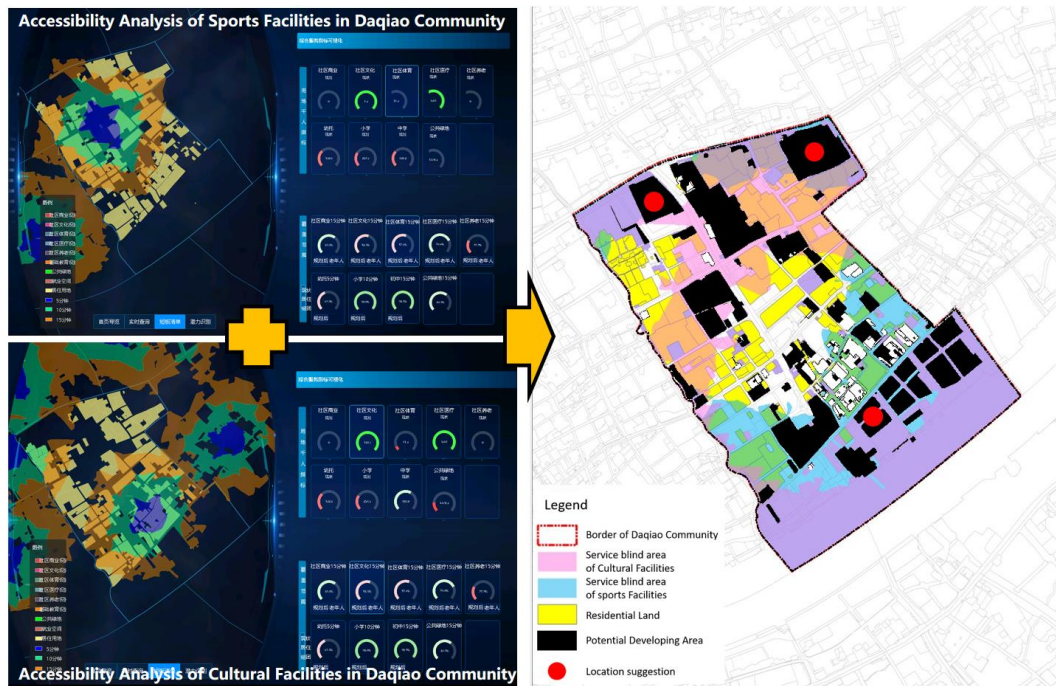


Figure 3: Facility location analysis in the Community Smart Platform 1.0

3.1.3 Multi-dimensional, Comprehensive Translation Demands

With the help of research mechanisms, smart platforms and other means, a map of demands can be formed and translated into a list of needs to guide subsequent action plans.

In Jing'an Temple Community, the planner constructed a set of public service facilities evaluation systems. Through GIS spatial network analysis, the accessibility and fairness of various facilities were analyzed. By evaluating the compliance rate and satisfaction of all kinds of facilities, the overall score of all kinds of facilities is obtained. The shortage of facilities in different governance grids can be accurately identified after the evaluation and superposition of various facilities.

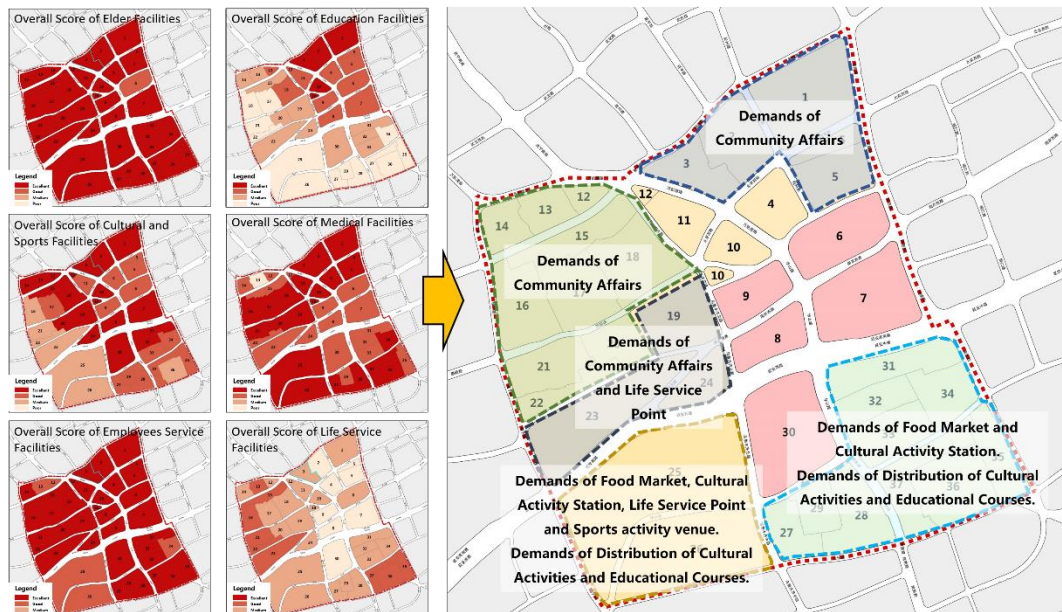


Figure 4: Score of Facilities and the Demands Map of Jinan Temple Community

3.2. Innovation of Configuration Patterns

By analyzing the various needs of the community and aiming at the characteristics of dense population and limited space in the central city, the configuration mode of the community service facilities is innovated. According to the function, category and scale of the supporting facilities at the three levels of "15-10-5 minutes", the principles of sharing, compound and preciseness are emphasized respectively.

3.2.1 15-minute Circle: Sharing

The supporting facilities in the 15-minute circle mainly meet the service needs at the community level, and the scale of the facilities is relatively large. Considering that there are still certain shortcomings in the supply of such facilities in the central urban area, and the implementation of large-scale facilities is relatively difficult, facilities at this level are more concerned with sharing configuration.

The first is cross-level sharing, that is, adding functions and Spaces for community service in the city-level or district-level facilities. Through consultation with relevant competent authorities or property owners, sub-district offices delineate part of the space in high-level facilities or organize community activities during idle hours, so as to realize resource sharing.

The second is cross-border sharing, that is, breaking the barriers of administrative boundaries and sharing facilities between different administrative regions. Consultation between different subdistricts is encouraged to give residents the same treatment, especially for those facilities with preferential policies for their own community, such as cultural and sports facilities, or facilities for specific groups, such as old-age care and education facilities.

The third is cross-group sharing, that is, service facilities targeted at specific groups are open to other groups if conditions permit. For example, the canteen, employee centers, and other resources for white-collar will be opened to residents and tourists; Community cultural centers for residents will also be opened to local corporate employees.

For example, Huangpu District jointly compiled a 15-minute life circle action plan for Huaihai West Road community and Ruijin Second Road community, which integrated the service facilities in the two communities, and some facilities with conditions implemented the above three types of sharing.

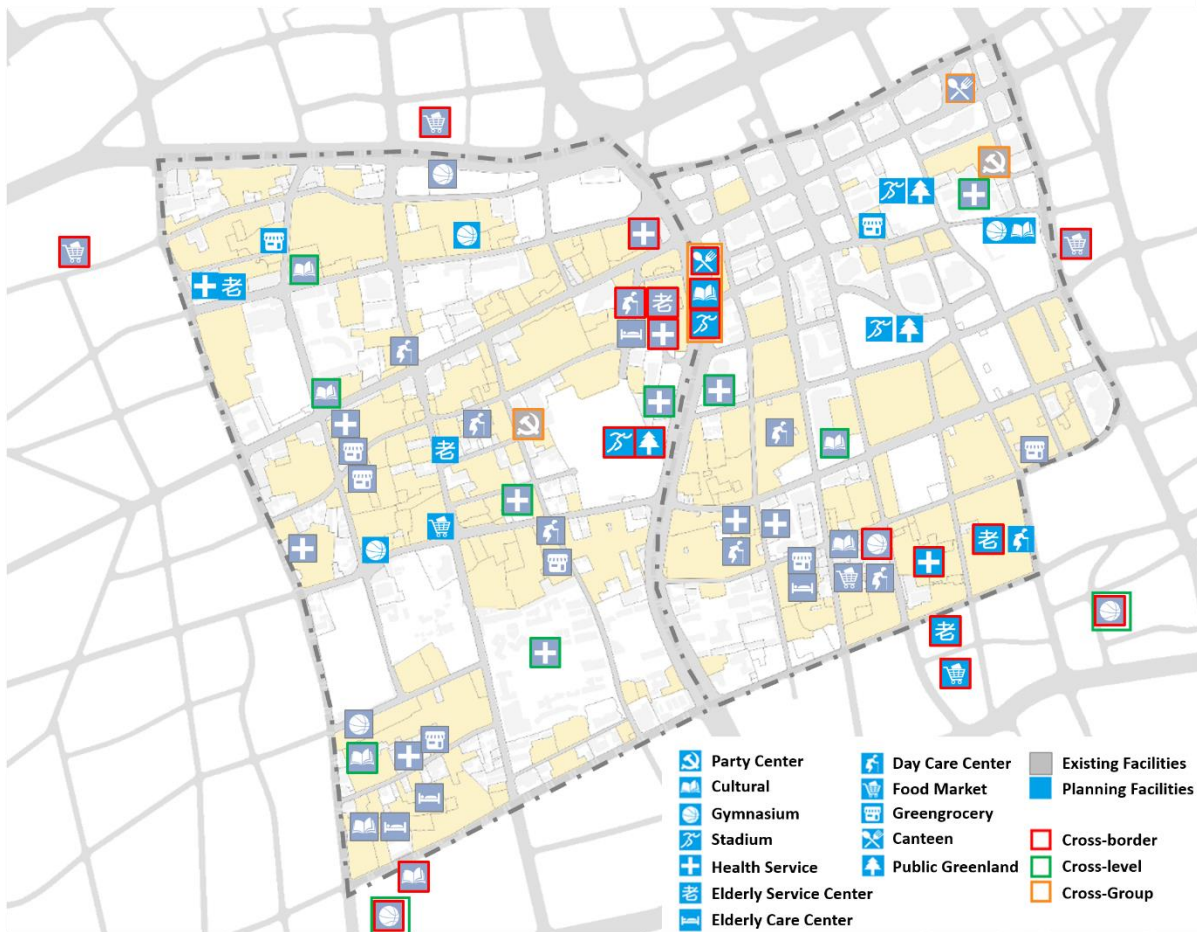


Figure 5: Sharing Configuration of Service Facilities in Huaihai West Road Community and Ruijin Second Road Community

3.2.2 10-minute Circle: Compound

The supporting facilities in the 10-minute circle are between the community level and the neighborhood level, and they are mainly medium-scale facilities implanted in response to the reality of land shortage in the central city, which requires that these kinds of facilities should fully consider the composite utilization of function, space and time.

In terms of function, it mainly advocates the mixed use of land, and the facilities with different functions are combined on the same land. In recent years, the combination of green space and community facilities has been promoted. For example, along the Middle Ring of Xuhui District, the protected green space under the high-voltage power corridor has been opened as a park, which conforms to a large number of sports facilities such as sports fields and running paths. And a sports center and a cultural center will implant in the green space along the Shang'ao River.

In terms of space, the main consideration is to cluster different kinds of functions in the same complex and change the original mode of independent Settings. For example, the newly built Hongqiao Community Center integrates various functions in the same building space, such as a community cultural center, a children's activity center, an elderly service facility, a health service station, and a gym through the improvement of floor area ratio and the full use of above-ground and underground space.

In terms of time, to solve the problem of limited service facilities, different types of community services can be realized through staggered scheduling.



Figure 6: Mix use of the Greenbelt along the Middle Ring, Xuhui District. Source: <https://www.163.com/dy/article/CSCRVMB605149R72.html>.

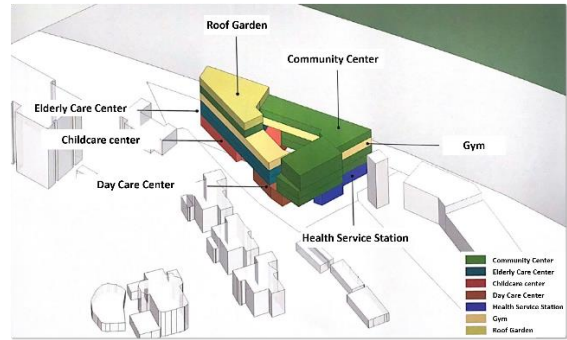


Figure 7: Hongqiao Community Center

3.2.3 5-minute Circle: Preciseness

The supporting facilities in the 5-minute circle are mainly aimed at neighborhood services, with small-scale and scattered layouts. The main emphasis of such facilities is the precise allocation and precise distribution.

Precise allocation mainly refers to the reasonable and effective allocation of resources to meet people's needs through accurate research on users. In the action plan for Huaihai West Road community and Ruijin Second Road community, the planners carefully investigated the distribution of the elderly population and analyzed the elderly facilities' locations and service radius. After a superposition analysis of population distribution and facility distribution, they proposed that a day care center should be added in areas where the elderly population is concentrated, transitional facilities should be considered in areas where population structures are changing during urban renewal, and the allocation should be postponed in areas with low elderly population density.

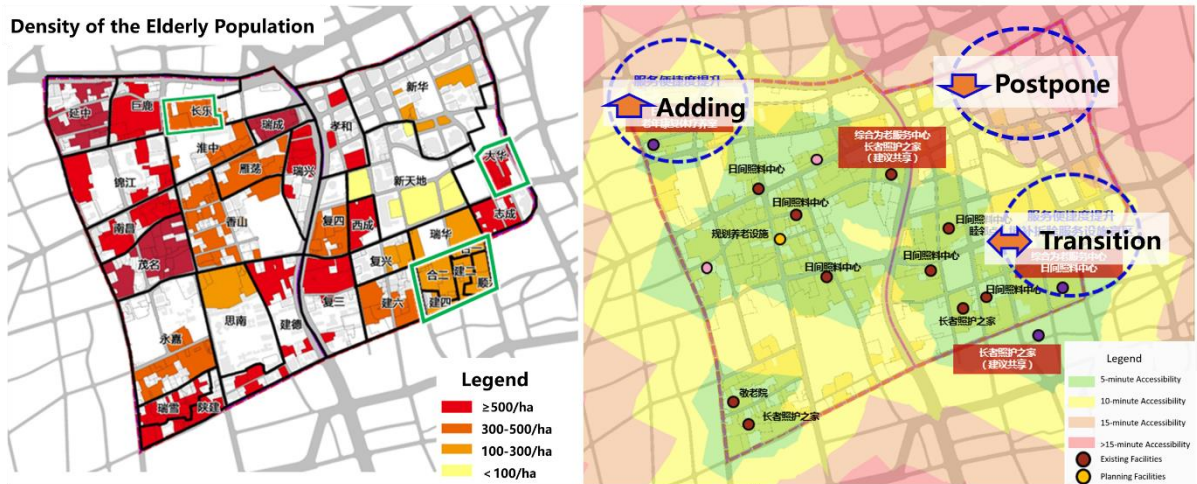


Figure 8: Precise allocation of Elderly Facilities in Huaihai West Road Community and Ruijin Second Road Community

Precision distribution means community services are regularly delivered to residential areas where it is difficult to add facilities through cooperation with social organizations. For example, Jing'an Temple community provides convenience service distribution, cultural service distribution, medical service distribution, and other services to community residents, which effectively solves the problem of scarce residential services in the CBD area.

3.2.4 Related Systems: Integration

Community service facilities also need to be coordinated with housing, employment, travel, leisure and other related systems. The usual approach is to form a series of action plans through the integration of "a blueprint". In the action list of community planning, public service projects tend to account for the highest proportion.

3.3. Innovation of Configuration Standards

Based on the comparison of current standards and the innovation of configuration mode, this paper explores the innovation of configuration standards, which mainly includes coordinating function types, promoting facility intensification, and improving configuration standards.

Based on the compatibility between various functions, the facilities of culture, sports, and education are categorized as well as the facilities of medical, elderly and welfare.

Promoting facility intensification mainly studies the actual functions of various types of facilities, and encourages the compound set of facilities with different types but compatible functions. The compound set of facilities can be given a certain reduction in scale.

The improvement of configuration standards is mainly based on residents' demands and government requirements, and the overall improvement of standards is carried out to reasonably determine the configuration scale and service radius.

The configuration standards adhere to the minimum scale of basic support facilities, guide the allocation of quality improvement facilities based on the differentiation of people's needs, and encourage intensive compound. Basic security facilities are mainly supported by the government, while for quality improvement facilities, the market forces are encouraged to participate as an important supplement to public facilities.

Category	Facility Name	Compound Set	Service Radius	Standard Values	Remarks	Cross-boder	Cross-level	Cross-group	Configuration recommendations
Cultural, Sports and Educational Facilities	Cultural Center	Community Cultural Center, Youth Activity Center (B-2500~4500)、Community School (Q-1000)	10' -15'	2800-5500m ²	One for every Subdistrict (Town)	√	√	√	--
	Parenting Care Point	Parenting Care Point (Q-360)	10'	360m ²	One for every 15,000 People	√	--	√	Encourage Market Force
	Activity Room	Cultural Activity Room(Q-100)、Elderly Activity Room(B-200)	5'	100-200m ²	One for every 5,000 People	√	--	√	Suggested to set up together with the Neighborhood Committee
	Gymnasium	Gym(B-1800)、Swimming Pool(Q-800)	10' -15'	2000-2600m ²	--	√	√	√	Encourage Market Force
	Sports Field	Sports Field (B-600)	10'	Land Area:600m ²	--	√	√	√	
	Sports Spot	Sports Spot (Q-300)、Fitness Facilities (Q-100)、Fitness Trails (Q)	5'	100-300m ²	--	√	--	√	--

Table 2: Suggested Configuration Standards, Take Cultural, Sports and Educational Facilities as an Example

Annotation: In the 'compound set' column, the letter B in () stands for basic support facilities, and Q stands for quality improvement facilities. The figures represent the standard value of the facility in current standards. The bold facilities are the facilities already configured in the existing standards, and the other facilities are newly added facilities based on the demands survey.

4. Implementation Approach

For the implementation of community facilities, this paper mainly explores 4 approaches: urban renewal, construction, community micro-renewal, and management.

The urban renewal project is an opportunity to improve the community service facilities. The urban renewal policy should be well used to guide the developer to actively support the implementation of the community service facilities. The existing policies encourage the original owner to provide public welfare facilities, so that land can be supplied in a targeted manner. And certain plot ratio incentives could be given to stimulate new development. As a result, a win-win solution can be reached in that the old property is renewed and the community service and environment are improved. For example, in the Baodi Xinhua project, the owner took out 15% of the floor area and handed over the property rights to the district government to allocate a community service center and build a sports field on the roof, thus transforming the industrial land into a commercial complex.

During the construction of community facilities, it is necessary to strengthen the planning guidance. For example, in the commercial projects of the Columbia Circle in Changning District, a community center is set up in combination. The planning guidance mainly emphasizes function and layout guidance, traffic organization, urban furniture, and implementation guarantee. Thus the types of supporting services, the layout and the location of the community center are definite, as well as the open space, street facilities, transportation organization mode, funding sources and other contents that need to be synchronized in the implementation.

For community micro-renewal projects, delicacy design is very important. Good design can achieve significant improvements in quality by embedding public services in the community with small, affordable modifications. In Baihua Village, a doorman's room is transformed into a micro-living room for neighborhood communication. A cultural wall and additional rest facilities are added in the first-floor stairwell, and some negative spaces are implanted rest, fitness, micro agricultural garden and other activity places.

For management, it mainly promotes multi-group interconnection and interaction. The interaction between communities, enterprises and government can make public services, social services and market services sink into the community management grid. The interconnection with social organizations can bring more and more volunteers and activities into the community, and further interaction will help the community's autonomy and co-governance. Through online and offline interaction, the service function will be strengthened and the channels for collecting opinions will be expanded with the Internet, social media, and offline promotion and distribution.

5. Epilogue

Community service is a crucial part of the construction of the 'People's City'. Through the analysis of the current situation of community service in Shanghai central city, this paper puts forward the planning strategy for improving community public service from the aspects of evaluation methods, configuration patterns and configuration standards, and also explores the implementation approach.

For the sustainable development of the community, it is still necessary to further improve the community management mechanism, strengthen the connection and feedback within various plans, and expand diversified funding channels, to realize rational planning, feasible implementation, orderly operation and excellent maintenance of community facilities.

6. References

Ministry of Natural Resource of the People's Republic of China. (2021) *Spatial Planning Guidance to Community Life Unit (TD/T 1062-2021)*. 1st edn. Beijing: Geological Press.

Shanghai Municipal Bureau of Planning and Land Resources. (2016) *Shanghai Planning Guidance of 15-Minute Community-Life Circle (Trial version)*.

Shanghai Municipal Bureau of Planning and Land Resources. (2016) *Technical Guidelines for Shanghai Regulatory Plan (Revised edition 2016)*.

Shanghai Municipal Peoples Government. (2017) *Shanghai Master Plan 2017-2035*. [online]. Available at: <https://www.shanghai.gov.cn/newshanghai/xxgkfj/2035001.pdf>

Yu, Y. F., (2019) 'From Traditional Residential Area Planning to Neighborhood Life Circle Planning', *City Planning Review*, 2019(5), p17-22.

Sun, D. S., Chai, Y. W., (2017) 'Study on the Urban Community Life Sphere System and the Optimization of Public Service Facilities: A Case Study of Qinghe Area in Beijing', *Urban Development Studies*, 2017(9), p7-14.

Xiao, F. Y., Yi, X. X. and Yang, X. L., (2019) 'Development Trend, Problems and Strategies of Public Service Facility Provision for Traditional Communities', *Urban Planning Forum*, 2019(2), p54-60.

Wei, W., Wang, B., Niu, Q. and Zhang, S. Q., (2018) 'A Study on the Friendly Strategy of Community Public Service Facilities from the Perspective of Homo Urbanicus: A Case Study of Typical Communities in Wuhan', *Urbanism and Architecture*, 2018(4), p8-12.