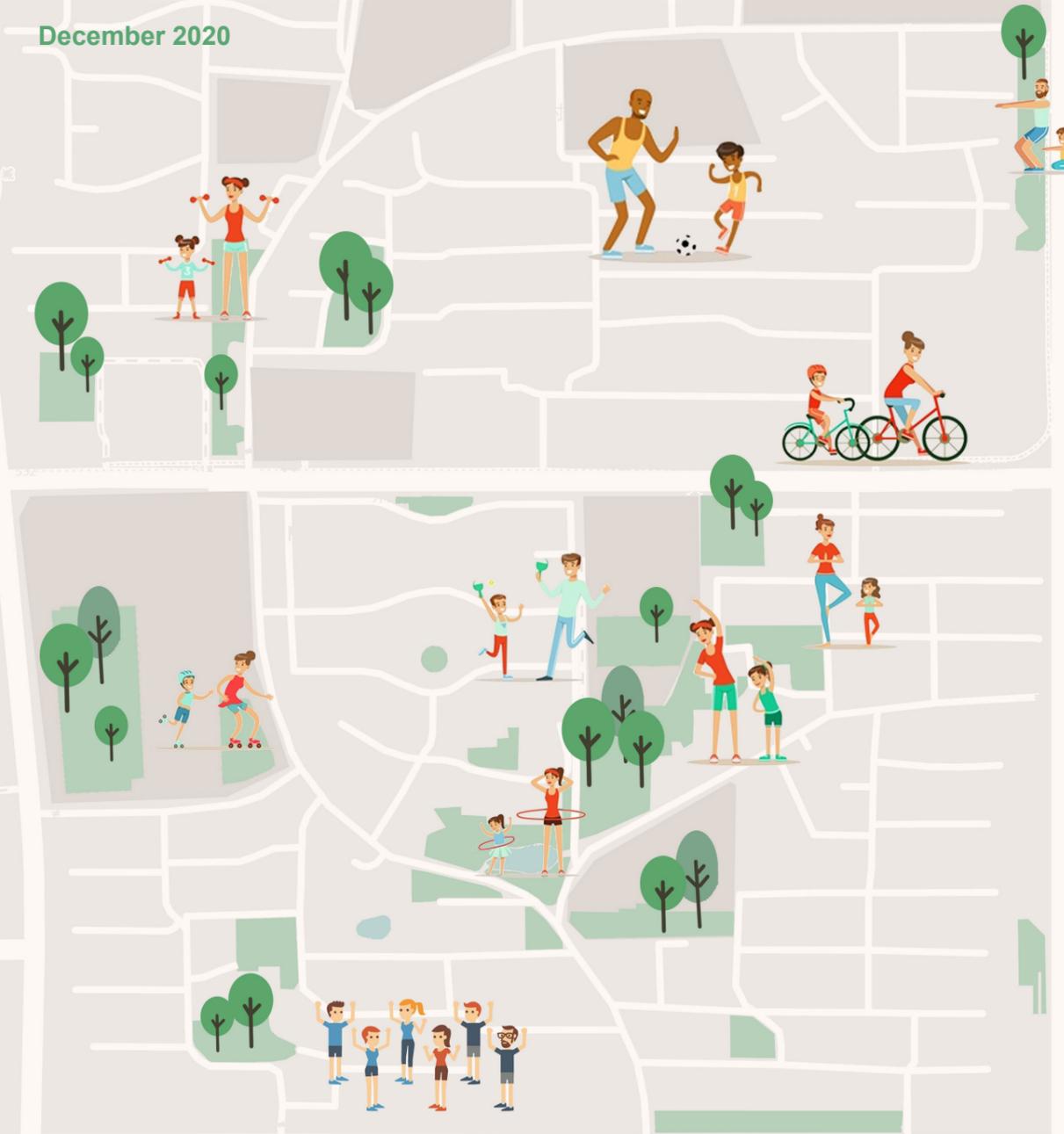


# Health-Oriented Micro-Regeneration: The Community Park at Kailu New Village, Yangpu District, Shanghai, P. R. China

December 2020



## Acknowledgement

This report was prepared by Professor Lan WANG and her students Xiji JIANG, Yirui DU and Zilin YANG at Department of Urban Planning, College of Architecture and Urban Planning, Tongji University, under the guidance of Barjor Mehta, Lead Urban Specialist, and Wanli Fang, Senior Urban Development Specialist at the World Bank. The report was peer-reviewed by Shahnaz Arshad, Senior Urban Specialist, Jon Kher Kaw, Senior Urban Development Specialist, and Annie Gapihan, Urban Development Specialist at the World Bank. Nick Paul provided editing service for final draft.

The planning and design activities documented in this report were conducted by Professor Lan WANG, Shaojie YAN, Chan LIN, Gang LIU, Yirui DU, Desong SHI, Luyun SHAO, Lin HUANG and Chenxi HUANG at Healthy City Wlan Lab of Tongji University. The following government officials provided support to the implementation of this project: Hui SUN, Director of Yinhang Street Office; Hong QIU, Party Director of Yinhang Street Office; Weinian GU, Deputy Director of Yinhang Street Office, and Ping DAI, Deputy Director of Yinhang Street Office.

# CONTEXT

---

## 1. Introduction

## 2. Country & city context

- 2.1 Relevant national strategies
- 2.2 City-level engagement

## 3. Description of the program

- 3.1 Design site
- 3.2 Design approach and targeted beneficiaries
- 3.3 Design and implementation arrangements
- 3.4 Time horizon
- 3.5 Financing mode

## 4. Design interventions responding to the key challenges of the healthy cities agenda

## 5. Results and impacts

- 5.1 Proposal evaluation
- 5.2 Achievements

## 6. Reflection and lessons learned

- 6.1 Scalable experience from the case
- 6.2 Limitations and future improvement

*Appendix 1: Questionnaire*

*Appendix 2: Resident Interview Questions*

*Bibliography*

# 1. Introduction

---

The pursuit of health and wellbeing is crucial for human society, and has been listed as one of the UN's Sustainable Development Goals-SDG 3[1]. Evidence has shown that conditions in the urban built environment have significant impacts on public health, with varying effects on communicable, non-communicable and psychological diseases. Understanding these impacts could better integrate the consideration of health in urban planning and design.

Infectious diseases such as cholera and yellow fever are related to factors such as street sanitation, housing conditions, and the quality of the sewage system. Non-communicable diseases such as cardiovascular diseases, respiratory diseases and diabetes are determined by the lifestyle and working status of local residents, which could be shaped by urban transportation system, housing and green space. The correlation has been increasingly recognized between mental illness and aspects of the built environment that include crowded housing, noise, and the absence of nature[2]. Conversely, urban space that promotes social interaction, for example, is conducive to alleviating psychological pressure. Health interventions and the enhancement of the built environment through urban planning and design can help reduce the risk of disease among a large population[3].

The control of infectious disease has been an important objective of urban planning and design since its inception. By improving living conditions in cities, it can provide basic protection for public health in industrial cities, as seen even during its early days in the 1900s. However, as health issues improved, the link between public health and urban planning began to weaken. Later, in the 1980s, the growing incidence of chronic non-communicable diseases began to pose a threat to public health, requiring a new focus on public health by urban planners. The World Health Organization (WHO) strongly advocates for the link between urban planning and public health to be re-established in various ways, proposing that urban planning has an important and positive effect on public health, and that 'health must be the primary focus of urban planners'[4].

Under the banners of "health in all policy" and "healthy city" development, the consideration of health has been gradually integrated into urban development at the city-scale, involving such measures as land use plans and urban regeneration at the neighborhood-scale, through urban planning and design. This report presents the process and mechanism of designing and implementing a micro-regeneration program. It focuses on a health-oriented design for a community park in an aging and dilapidated neighborhood of Kailu New Village, Yangpu District, Shanghai, P. R. China.

## 2. Country & city context

### 2.1 Relevant national strategies

Healthy cities and their planning provide the broad background for this project. The WHO first proposed the concept of the 'Healthy City' at its annual international conference in Canada in 1984. Its definition was formalized in 1994 as "one that is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life and developing to their maximum potential"[5]. The WHO initiated the Healthy City Movement based on this concept. In late 1990s, the Regional Office for Europe developed the Healthy Urban Planning Initiative, and identified key health objectives for planners which were close to the sustainable development goals[6]. With these initiatives, the planning and development of a healthy city to promote public health and wellbeing became an important agenda for local governments.

In a different version of the healthy city concept, China launched the national 'Hygienic City' program in 1989, to provide the basis for city health. In 1994, Dongcheng District in Beijing and Jiading District in Shanghai formally joined the WHO healthy city movement, and the city of Suzhou applied to join the movement in 2001[7]. In 2007, ten further cities were selected. Interventions on the use of tobacco, healthy lifestyles, and transportation safety were applied in these cities[8-10].

After 2010, initiatives and policies directly relating to healthy cities were developed under the administration of the National Health Commission. These include the **Healthy China 2020: Strategic Research Report** released in 2012,[11] the Plan of Health China 2030 issued in 2016,[12] and the **Healthy China Initiative (2019-2030)** announced in 2019.[13] President Xi has emphasized that health considerations will be integrated into all processes of urban planning and developments in 2020. The planning and development of healthy cities has received high priority from local government, and widespread attention among the public. This underpins the policy background at the national level to support health-oriented regeneration.

### 2.2 City-level engagement

At the city level, policies and programs are developed and implemented in three domains - public health, urban development, and community planning. These provide the framework for healthy-oriented urban regeneration.

A number of initiatives have functioned as a basis for the healthy development of Shanghai at the city level. Shanghai has joined the first batch of pilot cities the healthy city movement. In 2016, the Shanghai Declaration on Health Promotion in the 2030 Agenda for Sustainable Development was announced at the 9th Global Conference on Health Promotion. The Shanghai Consensus on Healthy Cities was proposed and adopted at the Healthy Cities Mayors Forum, where 100 mayors from around the world committed to prioritizing political choice for health in all domains of city governance, and to measure the health impact of all policies and activities.[14] In 2018, the Healthy Shanghai 2030 Planning Outline was put forward, proposing that health would be integrated in all policies to form a complete system for health service and a modern health governance.[15] The **Healthy Shanghai Initiative (2019-2030)** was formulated in alignment with national health policy documents in 2019. It proposes 18 major special action areas, including healthy education, healthy food, healthy environment, health promotion in both mental and physical health, and community health service provision, inter alia. It provides support from the domain of public health to initiate health-oriented design.

In the domain of urban development, Shanghai is shifting from the expansion of new built area to redevelopment of existing neighborhood, with greater emphasis on spatial quality and vitality, in an approach known as community micro-regeneration. This approach uses public space as an entry point. In line with the philosophy of a healthy city and community, it is aimed at improving the quality of the built environment, especially for physical activities and for social capital within the community. Since 2015, the municipal government of Shanghai has developed policies to reinforce comprehensive governance for residential quarters, with the objective of enabling 'urban governance innovation and community empowerment'. In 2017, the **Three-Year Action Plan for 'Beautiful Homes' in Residential Quarters in Shanghai (2018-2020)** program was announced, aimed at improving housing conditions and living quality in communities. Corresponding to this, the Shanghai Urban Planning and Natural Resource Administrative Bureau launched the Community Micro-Regeneration Program, introducing a mechanism for public participation and design engagement into the regeneration of community public spaces. All of these policies and programs promote small-scale public space in neighborhoods as the focal point in urban regeneration.

Yangpu district, one of the 16 sub-jurisdictions of Shanghai municipal government, has initiated the **'Community Planner' Program**. Accordingly, the district has invited 12 professors from the College of Architecture and Urban Planning at Tongji University to take charge of 12 communities defined as falling under the jurisdiction of the Street Office. Planners are embedded in the local communities for which they are responsible and conduct comprehensive surveys and analysis to identify urgent needs for improvement in the communities. They may then develop plans and design proposals for specific sites. The health-oriented micro regeneration of the public green area in Kailu New Village is one such project.



Figure 1 Location of Kailu New Village

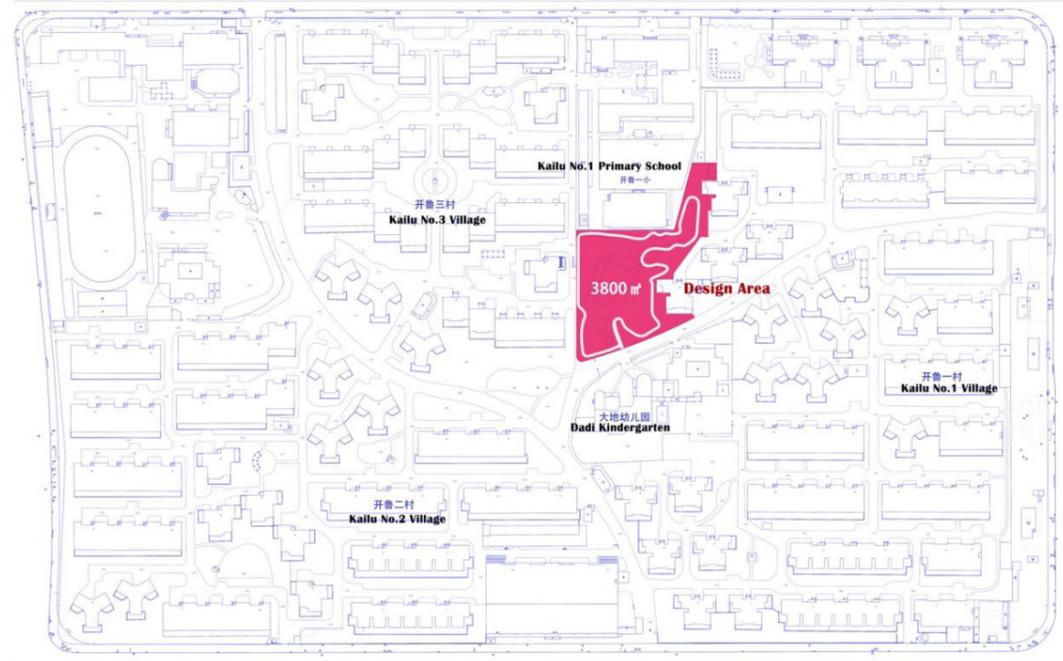


Figure 2

Design site location of the Health-oriented Micro-regeneration project of Kailu New Village



Figure 3: Bird's eye view of the site

### 3. Description of the program

#### 3.1 Design site

The community park at Kailu New Village was re-designed and implemented using a health-oriented micro-regeneration approach. Located in the northeast of Yangpu district, the Kailu New Village is a part of Worker's Village, a large-scale residential area developed in the late 1980s and 1990s (see Fig. 1). It comprises affordable housing, built for manufacturing workers, under the direct investment, allocation, supervision and management of local government.[16] Kailu New Village was in urgent need of regeneration: after over two decades, parks, plazas, facilities and amenities in the area are outdated and inadequate for the basic needs of local residents. With the support of the *'Beautiful Homes' Program*, the *Micro-Regeneration Program* and the *Community Planner Program*, the health-oriented regeneration project of the community park in Kailu New Village has been under design and implementation since early 2018.

The identified site for the Health-oriented Micro-regeneration project is the largest community park in Kailu New Village (see Fig. 2 and 3). Covering an area of 3,800 m<sup>2</sup>, the site is located between Kailu No.1, No.2, and No.3 Village, with a primary school to the north, a kindergarten to the south, and residential apartment buildings on both sides. It is a highly accessible and frequently used public space in the neighborhood. According to the sixth national census of China, there are a total of 10,346 residents (2,901 in No.1, 3,531 in No.2 and 3,914 in No.3 Kailu Village respectively). Elderly residents visit the area to chat after grocery shopping or to enjoy the sunlight; parents whose children study in the nearby kindergarten or primary school wait in the area before picking up their children; kids from the residential quarter or nearby schools sometimes play and use fitness facilities in the park.

However, existing facilities were in need of attention (see Fig. 4). On the existing site, there was a 300-meter walking trail, a hard-ground square, some fitness facilities, a pergola for board games and several benches in the area. The fitness facilities were old and inadequate to meet the need for physical activities; the paving of the square was old and shabby; trees and other vegetation were disordered; and there was a lack of facilities for relaxation such as chatting and sunbathing. Existing facilities and spatial planning could not meet the health demands of users of the green area and may in fact have contributed to negative health effects, exposing them for example to strong, freezing winds in the winter and poor air mobility in the summer.



Figure 4: Existing facilities

### 3.2 Design approach and targeted beneficiaries

Acknowledging the problems of these facilities, the team took a health-oriented approach to design. In accordance with the procedural framework, this included three major steps: a health-oriented site analysis; health-oriented design; and a health impact assessment (see Fig. 5). The health-oriented site analysis focuses on health demand, health resources and health risks at the site. Three pathways are adopted in the health-oriented design: promoting physical activities and social interaction; providing accessible health facilities; and reducing pollution exposure. Finally, a health impact assessment was conducted for the proposal to evaluate its intended effects on public health in transforming the community park into a healthy place.

Targeted beneficiaries include seniors, children, and their parents. The health-oriented design for the community park is aimed at serving these groups by achieving the objective of 'Health for All'. The implementation of the project would promote public health in the neighborhood through physical activity and social interaction. The potential health risks have been considered and mitigated in the design, and health facilities have been installed to support an active lifestyle for residents at all ages.

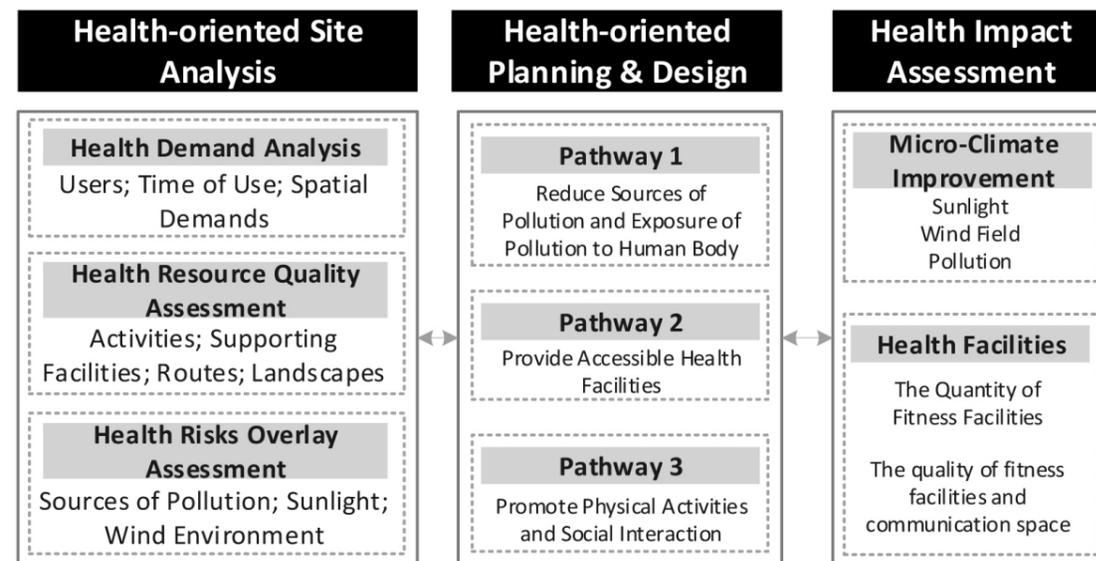


Figure 5 Procedure Framework of Health-oriented Design

### 3.3 Design and implementation arrangements

The health-oriented project was implemented and administered by various institutions or departments. In the policy initiation stage, the Yangpu District Government administered the **Community Micro-Regeneration Program** and the **Community Planner Program**. The Urban Planning and Natural Resource Administrative Bureau of Yangpu District worked together with the Yinhang Street Office, the community planner and local residents in site identification and selection. Site design was conducted by the research and design team of Healthy City Wlan Lab. The design process started with survey and interview of local residents, and on-site observation of their temporal-spatial behavior. It was followed by workshops with representatives of local residents, and officials of the Street Office and Neighborhood Committee to discuss the draft proposal. Focus groups were also hosted by the Street Office with seniors and schoolchildren to collect their ideas and opinions about the site. All of the information gathered was taken into account to some extent when drawing up the eventual plan. Once the draft proposal was accepted by the representative of local residents and officials of Street Office and Neighborhood Committee, it was presented to the appropriate high-level government departments. The final proposal was reviewed by Yangpu District Government; the Urban Planning and Natural Resource Administrative Bureau of Yangpu District; the Landscaping and City Appearance Administrative Bureau of Yangpu District; and the Yinhang Street Office. The input from and review by multiple groups of local residents and diverse departments of local government ensured that the plan would follow regulations and improve collective benefits for the neighborhood. The data from surveys, interviews and on-site observation provided the foundation for the design, supporting the effective development of a draft proposal for local residents and public officials to consider during the workshop and focus group.

Since all design consulting fee and construction cost was covered by Yangpu District from its revenue, the Financial Bureau of Yangpu District was in charge of the financial support of the project through the **Community Planner Program** and the **'Beautiful Homes' Program**. The bidding, supervision, and financial arrangements for the construction were run by the Yinhang Street Office. The money was transferred from the district government to the street office for the operation.

Various types of fitness equipment were designed and installed in the park by the Administrative Bureau of Sports of Yangpu District. The cost of replacing the existing fitness equipment was covered by the Administrative Bureau of Sports, but in addition the Street Office needed to transfer an amount covering the cost of extra equipment, such as a slide set for children, to the Administrative Bureau of Sports. Finally, the Urban Planning and Natural Resource Administrative Bureau of Yangpu District, Landscaping and City Appearance Administrative Bureau of Yangpu District and Yinhang Street Office provided the construction acceptance for the project.

The leading agency in the design and arrangement process was the Street Office, a local administrative unit falling under Yangpu District and above the Neighborhood Committee. Unlike community organizations and non-government agencies, it was part of the 'Two-level Government (municipal and district), Three-level Administration (municipal-district-street office)' system of Shanghai Municipal Government, as the third level of administration. It made the final decision about the regeneration site, and reported to the district government. The design, construction bidding and supervision were all organized and managed by the street office. While, Yangpu District Government held the right of final approval of the proposal and budget for the construction, the Yinhang Street Office had authority over the project at the operational level. As the focal point, the street office functioned well in communicating with and enabling collaboration between local residents, the neighborhood committee, the design team and high-level government officials. It also ensured the smooth and effective conduct of operations.



Figure 6 Students from Kailu No.1 Primary School participating in the 'Little Planners' program

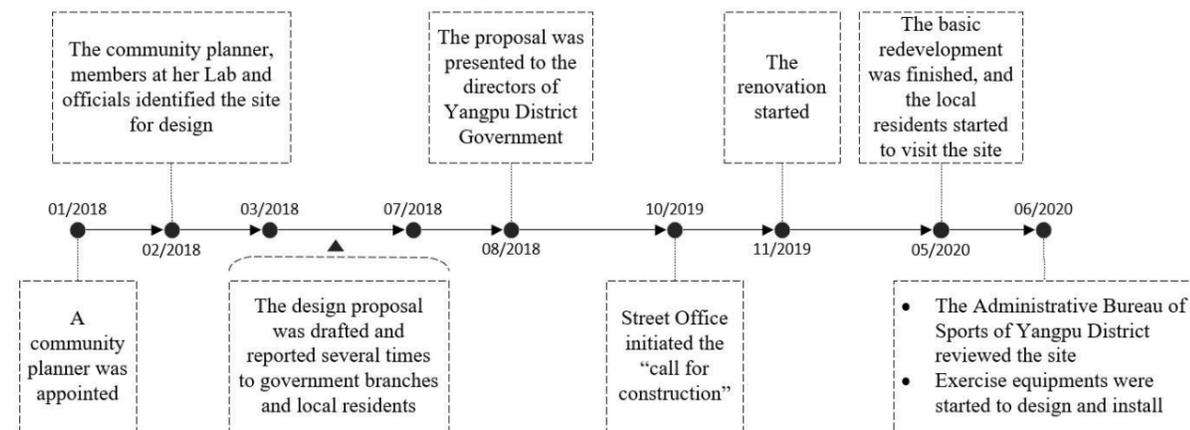


Figure 7 Key milestones of the process

An innovative aspect of the project was the involvement of schoolchildren in its design. During the design process, the team hosted the 'Little Planners' event, together with Kailu New Village First Primary School (on the north of the site), the Kailu Neighborhood Committee, the Yinhang Street Office and the Shanghai Tongji Urban Planning & Design Institute (See Fig. 6). Instructed by teachers, community volunteers and team members from the Healthy City Wlan Lab, students from the primary school proposed their design ideas for the community park. Six groups of students visited the site and then drafted their plans, complete with model trees, model cars and colored plasticine clay, on the site map. Each group presented their plan at the event. The team took the visions of young residents into consideration in the ongoing design. At the end of the event, clay molds were made of the students' handprints, for permanent display on the exhibition walls between the primary school and the community park – celebrating the involvement of the students and creating a lasting identity for the Park as a place rooted in its community. The involvement of specific spatial users through interesting approaches to participation brought fresh ideas to the design team, and enhanced consensus building around the project.

### 3.4 Time horizon

The project began in early 2018. A community planner, who is the director of the Healthy City Wlan Lab, was appointed for the jurisdiction of Yinhang Street Office in January of that year. In February, the community planner and other members of the Lab visited the Kailu New Village and identified the site for design, together with the officials from Yinhang Street Office and Kailu Neighborhood Committee, who represented local residents and collected their demands. The design proposal was drafted between March and July 2018, and updates provided several times during the process to the Urban Planning and Natural Resource Administrative Bureau of Yangpu District, the Landscaping and City Appearance Administrative Bureau of Yangpu District, the Yinhang Street Office, the Kailu Neighborhood Committee, and to local residents. The proposal was presented to the directors of Yangpu District Government in August. Once it was approved, the financial arrangements from the Yangpu District Government for Yinhang Street Office to implement the project were issued in early 2019. The design team from the Healthy City Wlan Lab then expanded the proposal with details for construction. Officials from Yinhang Street Office initiated the "call for construction" in October 2019, and the renovation started in November 2019. The basic redevelopment was finished in May 2020. Local residents have since started to visit the site. The Administrative Bureau of Sports of Yangpu District reviewed the site and started to design and install exercise equipment in June 2020. Key milestones are presented in Fig. 7.

It was always a challenge to include all ideas and considerations from multiple groups of local residents and officials from government departments. This actually caused the process of design and approval to be longer than the duration of construction. A pivotal role was played by the street office which functioned as the first gateway for information exchange and decision-making. Its authority helped the design team to coordinate inputs from multiple departments and local residents. The design team considered the healthy demand of populations in each age group through surveys, interviews, on-site observation, workshops and focus groups, inter alia, and conducted simulations, analyses and assessments to support the proposal according to a systematic and scientific approach. It ensured that the proposal itself was more convincing, and its execution was more feasible. The longer duration of design in fact proved necessary to the building of consensus before construction.

### 3.5 Financing mode

Financial support for the project was totally dependent on local government revenue, and was arranged through different government units. There were three types of expenses - design, construction and equipment (See Fig. 8).

- For **design costs**, the community planners signed a contract with the Urban Planning and Natural Resource Administrative Bureau of Yangpu District under the **Community Planner Program**. The total fee for the design was 200,000 RMB, lower than the market rate, because the **Community Planner Program** emphasized the social responsibility of planners towards communities.
- **Construction costs** fell largely under the budget for the **'Beautiful Homes' Program** and the **Community Micro-Regeneration Program**. After the approval of the construction fee by the Yangpu District Government, 2.1 million RMB was allocated by the Financial Bureau of Yangpu District to Yinhang Street Office.
- For the **fitness equipment**, the Administrative Bureau of Sports of Yangpu District replaced expired equipment with corresponding new gear without any charges. Newly-added equipment for kids cost about 26,000 RMB, and required a governmental transfer payment from Yinhang Street Office to the Sports Bureau.
- Kailu Neighborhood Committee, together with residential volunteers, organize the daily management, maintenance and cleanliness of the facility.

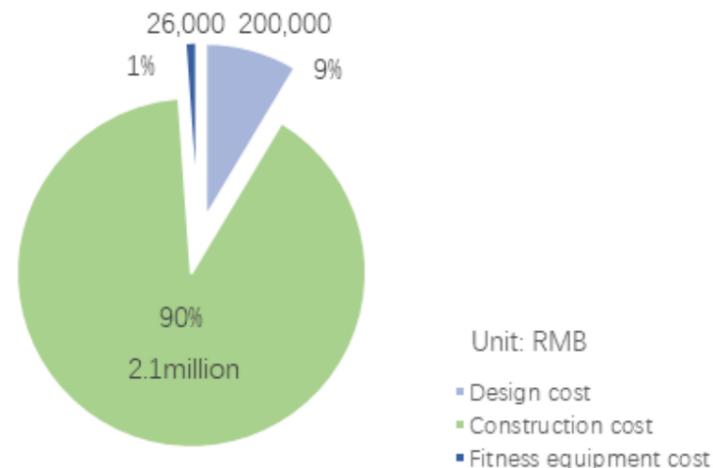


Figure 8 Financial Support for the Project

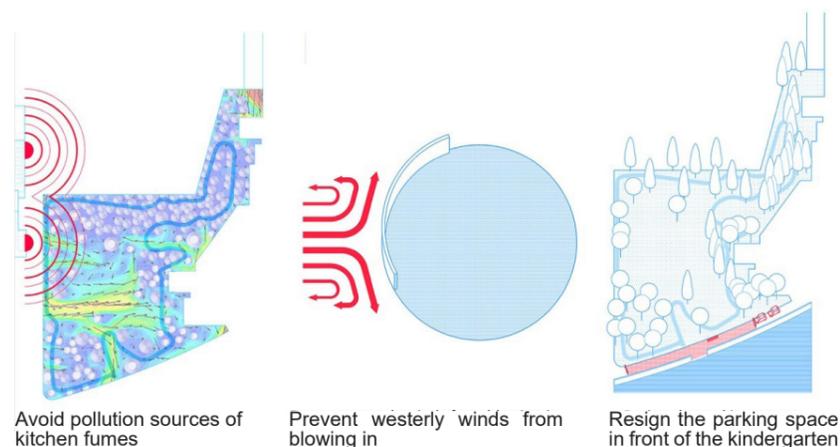


Figure 9 Retrofit Design for Health Risks

## 4. Design interventions responding to the key challenges of the healthy cities agenda.

The difference between regular design and health-oriented design is that the latter devotes more spatial elements to health promotion. These elements reduce human exposure to pollution, provide accessible health facilities, and enable increased physical activity and social interaction. These three pathways of spatial promotion for public health proposed by the director of Healthy City Wlan Lab was adopted by the **Integrating Health in Urban and Territorial Planning: A Sourcebook**, released by WHO and UN-Habitat in 2020[17]. The design team followed health-oriented principles to create a place that promotes wellness for people of all ages. These principles were integrated in the design proposal based on a health demand survey, and a wind field and sunlight simulation via Tangent and WindPerfectDX.

### Pathway 1: Reducing sources of pollution and exposure to health risks

Exposure to health risks during activities may offset their health benefits and cause negative impacts on health[18]. The major air pollution sources of the design site were from automobile and kitchen fumes. It was identified that the north side of the site suffered poor internal air mobility due to the surrounding tall trees, and that certain areas with slow wind speed hindered the diffusion of fumes from the kitchens of the surrounding residential buildings. The parking lot for motor vehicles in front of the kindergarten had a negative impact on the walking environment. The team redesigned the parking lot in front of the kindergarten, and rearranged the trees to improve the wind field for ventilation.

The proposal also attempted to improve the entire wind field of the site, especially during the winter (see Fig.9). The west entrance was partially affected by the winter monsoon, with a wind speed greater than 3m/s, potentially causing physical discomfort. After the regeneration, this situation has improved significantly. The strong wind corridor of the central area is improved to encourage air circulation of a more comfortable speed, suitable for a variety of activities. The partial-enclosure design with a flower terrace at the west entrance reduces the wind speed on the west side to ensure that residents feel comfortable in winter and are not affected by the cold monsoon. The pergola for board games also offered some protection from the chilly winter wind.

Similarly, a sunlight simulation was conducted to ensure enough sunlight for physical activities during the winter (see Fig.9). The team identified the west and northeast side with its tall trees as particularly shady, with less than one hour of sun during the daylight hours on the Winter Solstice. This resulted in an uncomfortably cold environment for outdoor activities. By removing certain trees, the shadow area has been reduced. The team also allocated activity zones for pre-school children, teenagers and the elderly accordingly to the movement of sunlight and the available time to each group for their activities - for instance, the after school hours in the case of children. The entire environment for activities has been improved with the extension of the duration of sunlight.

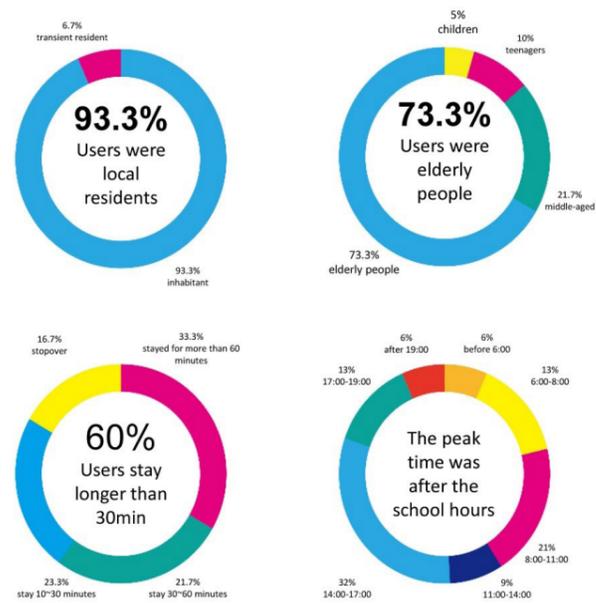


Figure 10: Survey results



Figure 11 Site-plan with multiple functional zones

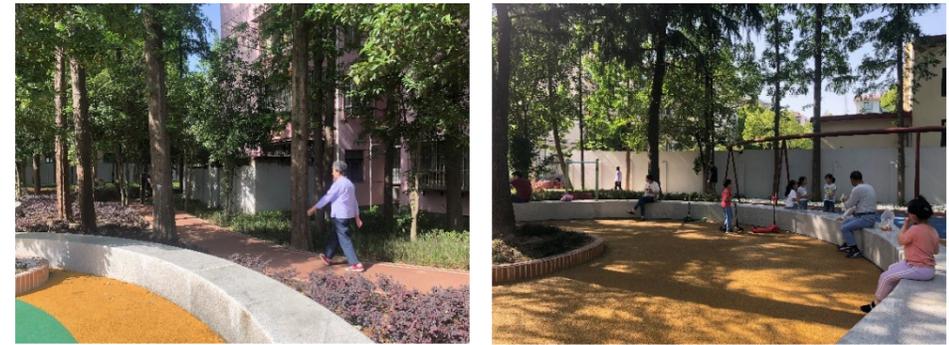


Figure 12 Spaces for physical activities and social interaction

## Pathway 2: Providing accessible health facilities

The team conducted a health demand survey to understand what health facilities were needed in the neighborhood. They invited students from Kongjiang Middle School to jointly conduct preliminary investigations via questionnaires, interviews and field observations. From the residents' questionnaires (Appendix 1) and interviews (Appendix 2), the team identified that certain facilities were in great demand, including seats for chatting and relaxing, playground for kids, and a cafeteria, inter alia. It also discovered that most users were local residents, the majority of them elderly people over 60. They normally spent more than 30 minutes in the area, and their peak time of use was from 8-11 a.m. and 2-5 p.m., especially immediately before and after school hours (see Fig.10). The main types of activities included fitness training using the walking trail and fitness facilities, board games, relaxation such as sunbathing, and socializing after grocery shopping. Users suggested adding benches, zones for socializing, and toy zones, and opening access to the fitness facilities in the nearby primary school.

The design team aims to maximize the use of the 300 meters of existing fitness trails. It will achieve this by redesigning the entrances to avoid conflicts between different directions of pedestrian flow. Based on the spatial-temporal behaviors of park users, such as chess playing and socializing after grocery shopping, the team proposed that new types of health facilities such as sand boxes and a seating area be installed, and the safety level of existing facilities upgraded. It was also proposed that the public parking garage for bikes be converted into a cafeteria on the northeast corner. It would not only serve coffee or tea, but also function as a meeting and book reading place. The idea, however, has not yet been implemented due to the limited budget.

## Pathway 3: Promoting physical activities and social interaction

The team designated the function zones to meet the diverse activity needs and the spatial-temporal behavior trajectory of all age groups, also taking sunlight and wind condition into consideration (see Fig. 11). The design proposal established a Family Activity Zone to promote interaction between the young and the elderly, and provided fitness equipment for them to exercise together. The plaza in front of the kindergarten was redesigned to reduce pollution from automobiles, and to add a waiting zone for parents to pick up their children after school. The waiting zone was situated adjacent to the Family Activity Zone, with easy access between the two. The Central Square provided a space for activities such as square dancing, a farmers' market and exhibitions (see Fig. 12). A performance stage was set up at a location of minimum exposure to wind during the winter months. An activity zone specifically for elderly was located close to the waiting zone, and a semi-outdoor pergola designed for the playing of chess and poker. The Youth Activity Zone was adjacent to the primary school to the north, albeit at a distance to avoid injury. Several spots for chatting were positioned around the Central Square.

## 5. Results and impacts

### 5.1 Proposal evaluation

The evaluation of the design proposal followed the framework and methodology of Health Impact Assessment (HIA). According to WHO, HIA is 'a combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population'[19]. During the design process and after the development of the proposal, the team carried out HIA for the proposal with a focus on micro-climate change, increase in health facilities and improvements in accessibility.

The micro-climate changes, including wind field and sunlight, were simulated to compare the status quo and the design proposal (see Fig 13). The strong winter wind velocity in the area to the west has been mitigated. The performance stage and the flower terrace could alleviate the strong winter wind in certain areas. The calm-wind zone on the northeast side has been adjusted in the proposal for better ventilation. The average wind speed in activity zones should be less than 5m/s, while in zones for badminton and sand playing it should be no more than 3m/s after the regeneration. The sunlight conditions have also been improved. Certain trees were removed to improve exposure to sunlight, and all activity zones are allocated in such a way that the duration of sunlight in winter is longer than 3 hours between 9 a.m. and 3 p.m. In summer, the crowns of trees and the roof-covered areas were considered to provide sufficient shaded areas.

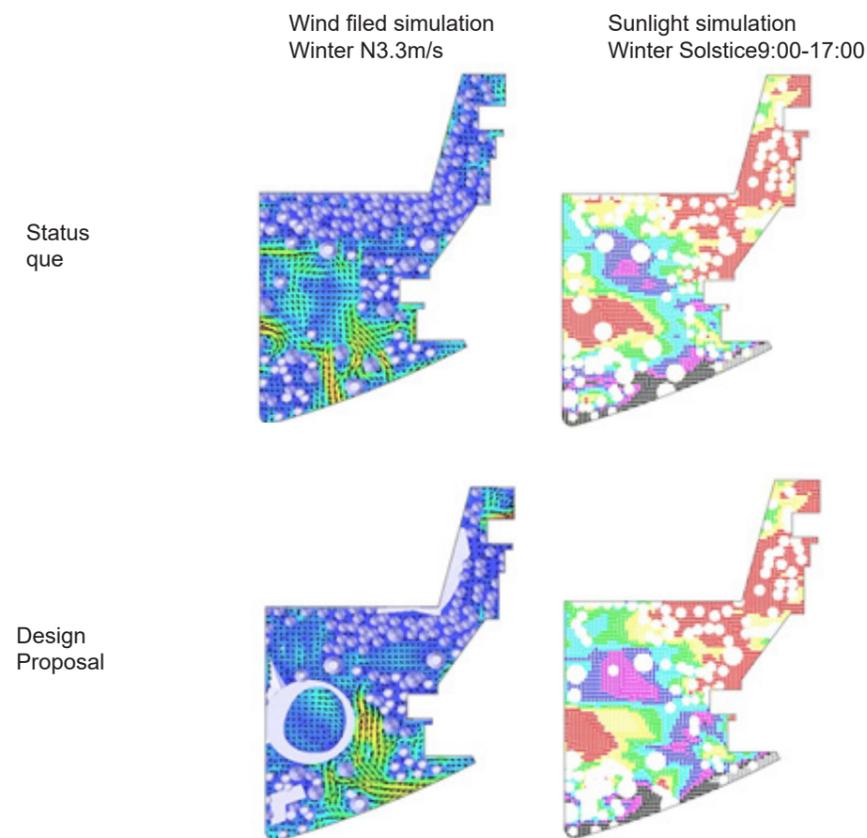


Figure 13

Sunlight and Wind Field in the Green Area before and after Regeneration

Regarding the health facilities, the project led to the improvement of the 372 m<sup>2</sup> of hard-ground space for physical activities and the 315-meter walking trail. 133 m<sup>2</sup> of space for children and 190 m<sup>2</sup> of space for teenagers were added, and 48 m<sup>2</sup> of semi-outdoor space has been provided in the form of a pergola for chess and poker players. The project redesigned the plaza in front of the entrance of the kindergarten to reduce pollution exposure and create a waiting space for parents and grandparents picking up children, a move which was welcomed by the local residents. More benches and fitness equipment were added to promote social interaction and physical activity. The HIA of the design proposal has showed the potential positive effects of the micro-regeneration on public health.

### 5.2 Achievements

All aspects of facilities and greenery included in the built environment of this community park have been improved (see Fig. 14). Interviews with local residents after the construction of the community park were conducted by a reporter from the Xinmin Evening News; these revealed that the concept of health-oriented micro re-generation of green space has gained recognition from the community. The interviewed residents generally said that 'this park was extraordinary and attractive'. The number of users has increased by 40 percent.[20] In the past, residents often walked for 20 minutes to go to a nearby park for activities. Since the improvement of the community park, residents enjoy time spent in the activity area, with elder residents visiting it two to three times a day, teenagers and pre-school kids frequenting the space, and adults walking on the trail to relax after work. The frequency of use of public green space after micro-regeneration has been significantly increased.

The new health-oriented community park is likely to contribute to both the physical and mental health of all residents. The neighborhood committee has organized dozens of volunteers to manage the green space, remove garbage and prevent unruly behavior. They also envisage that in the future, the plants in the green space could be taken care of by the residents themselves, through claims or contracts.

Before the regeneration



After the regeneration





Figure 14

Built Environments in the Community before and after Regeneration

## 6. Reflection and lessons learned

### 6.1 Scalable experience from the case

Various aspects of this micro-regeneration project could be adopted in similar projects elsewhere in the world, and also in projects at other geographic scales. These aspects include the health-oriented design, the health impact assessment, and the community planner initiative.

**Health-oriented design** promotes physical activity and social interaction, provides health facilities and reduces health risks through urban design. The procedural framework of the health-oriented design comprises three steps: health-oriented site analysis, health-oriented planning and design, and a health impact assessment. Health demand surveys, temporal-spatial behavior surveys, and wind field and sunlight simulations may be used to identify the health requirements and behavior preferences of local residents, as well as areas in need of improvement. The fundamental purpose of health-oriented design is to provide healthy places to promote active lifestyles for all residents. A community park, as a space closely associated with residents' daily life, could function as the key healthy space at the neighborhood level[1]. The potential positive impact of the physical environment on the promotion of health could be achieved through this type of design in urban development and regeneration.

A **Health Impact Assessment** can provide clear guidance for decision makers, planners and local residents, assisting in their understanding of the health effects of a project. Urban regeneration should be regarded not only as an improvement of the physical environment, but also an opportunity to promote public health. The health effects of urban regeneration could be categorized into health risks such as pollution exposure, and health benefits such as physical activity and social interaction. The HIA should be widely adopted in urban development projects for its positive effects on public health.

Finally, the **Community Planner program** could be applied in cities with community regeneration needs. Under this system, projects at the community level are financially supported by the government, and developed by professional design teams. Local communities are empowered in the process of implementation, receiving advice and assistance in establishing a community vision for the project under consideration. Using this system, the planning proposal could better accommodate the cultural context and demands of the local communities, while achieving cross-sectoral coordination between governments, academic institutions, and local communities.

### 6.2 Limitations and future improvement

The project has basically completed the construction stage and the community park has just been put into operation. Subsequent maintenance and operational follow-up will further enhance the experience of local residents. Therefore, the actual health benefits and outcomes of this project will be verified by local residents at some point in the future.

Micro-regeneration requires collaborations among residents, governments, designers, civil society and relevant associations. In this case, all financial arrangement have been handled within local governments, which may cede more authority to relevant government departments. Other potential stakeholders, such as migrant workers living in the neighborhoods, and grassroots organizations, could be better empowered through future planning practices.





## Bibliography

- [1]. World Health Organization. 2020. The Global Goals for Sustainable Development [EB/OL]. <http://www.globalgoals.org/>. [Accessed July 19, 2020]
- [2]. Evans, G.W. 2002. "The Built Environment and Mental Health", *Journal of Urban Health, Bulletin of the New York Academy of Medicine*, No.80,2003, pp.536-555.
- [3]. Wang L, Zhao X, Jiang X et al. "Study on Healthy city planning from the perspective of particulate matter distribution: Theoretic framework and empirical methodology" [J]. *City Planning Review*, 2016, 40(09):39-48
- [4]. Maria Neira. 2018. Health must be the number one priority for urban planners [EB/OL]. <https://www.who.int/mediacentre/commentaries/2018/health-urban-planning/en/>. [Accessed March 21, 2018]
- [5]. World Health Organization.2020. "Healthy Cities" [EB/OL].<https://www.who.int/healthpromotion/healthy-cities/en/#:~:text=%E2%80%9CA%20healthy%20city%20is%20one,developing%20to%20their%20maximum%20potential.%E2%80%9D>. [Accessed July 19, 2020]
- [6]. Barton, H., M. Grant, C. Mitcham, and C. Tsourou. 2009. "Healthy Urban Planning in European Cities", *Health Promotion International*.No.24(S1),2009,pp.91-99.
- [7]. State Council of China. 1989. "Decision on Strengthening Patriotic Sanitation Work" [J]. *Bulletin of the State Council of the People's Republic of China*, 1989 (7).
- [8]. Xuan Z, C. Wei, and H. Fu. 2002. "Contemporary concepts of healthy cities" [J]. *Shanghai Journal of Preventive Medicine*, 2002(04):197-199.
- [9]. Jiang Y, and C. Chang. 2012. "Construction of healthy cities at home and abroad" [J].*Chinese Journal of Preventive Medicine*, 2012(08):754-756
- [10]. Ren R. 2012. "The new idea and guiding on construction of healthy cities" [J]. *Philosophy and Medicine (A)*, 2012,33(04):1-3.
- [11]. The Central People's Government of the People's Republic of China. 2012. *Healthy China 2020: Strategic Research Report*[EB/OL].[http://www.gov.cn/gzdt/2012-08/17/content\\_2205978.htm](http://www.gov.cn/gzdt/2012-08/17/content_2205978.htm). [Accessed July 19, 2020]
- [12]. Ministry of Health announced *Healthy China 2020: Strategic Research Report* [EB/OL]. [http://www.gov.cn/gzdt/2012-08/17/content\\_2205978.htm](http://www.gov.cn/gzdt/2012-08/17/content_2205978.htm). [Accessed July 19, 2020]
- [13]. National Health Commission of the People's Republic of China. 2019. *Healthy China initiative (2019-2030)* [EB/OL]. [http://www.gov.cn/xinwen/2019-07/15/content\\_5409694.htm](http://www.gov.cn/xinwen/2019-07/15/content_5409694.htm). [Accessed July 15, 2019]
- [14]. World Health Organization. "Shanghai consensus on Health"[EB/OL].<https://www.who.int/healthpromotion/conferences/9gchp/healthy-city-pledge/zh/>. [Accessed July 19, 2020]
- [15]. Shanghai Municipal People's Government. "Healthy Shanghai 2030" Planning Outline [EB/OL]. <http://www.shanghai.gov.cn/nw2/nw2314/nw2319/nw44142/u26aw55477.html>. [Accessed July 19, 2020]
- [16]. Yang, Chen. 2017. "History, Identity and Space Three Dimensions of the Research on Workers' Villages" [J]. *Time Architecture*, 2017,2.
- [17]. UN-Habitat and World Health Organization. 2020. *Integrating Health in Urban and Territorial Planning: A Sourcebook* [EB/OL]. [https://unhabitat.org/sites/default/files/2020/05/1-final\\_highres\\_20002\\_integrating\\_health\\_in\\_urban\\_and\\_territorial\\_planning\\_a\\_sourcebook.pdf](https://unhabitat.org/sites/default/files/2020/05/1-final_highres_20002_integrating_health_in_urban_and_territorial_planning_a_sourcebook.pdf). [Accessed May 21, 2020]
- [18]. Jiang. Y., G. Huang, and B. Fisher. 2019. 'Air quality, human behavior and urban park visit: A case study in Beijing[J]. *Journal of Cleaner Production*, 2019,240(UNSP 118000)
- [19]. WHO. *Health Impact Assessment* [EB/OL]. <https://www.who.int/heli/impacts/hiabrief/en/>. [Accessed July 19, 2020]
- [20]. Sou Hu.2020. 3,800 square meters of wasteland in Yangpu District has turned into the most beautiful garden, and children no longer need to envy other homes [EB/OL]. [https://www.sohu.com/a/417374590\\_652918](https://www.sohu.com/a/417374590_652918). [Accessed September 09, 2020]

## Health-Oriented Micro-Regeneration:

The Community Park at Kailu New Village,  
Yangpu District, Shanghai, P. R. China