

Resilient Replicable School-entrance Design of Jiangsu Liveable Neighborhood

Sijia FAN, Jiangsu Institute of Urban Planning and Design, China

Abstract

Under the context of the “Jiangsu provincial livable neighborhood” construction, this people centric design proposal precisely starts from the congested and anxious problem during the pick-up time around the school entrance in Yaofangmen neighborhood, offers design solutions on different levels, to firstly solve the traffic congestion, to secondly solve the parents’ psychic anxiety and to finally reach the 24-hr compound use of the school entrance space for the whole neighborhood. Meanwhile, the “Co-create” design implementation mechanism is also analysed. This paper aims to offer a design and implementation methodology for the provincial-wide neighborhoods to solve similar problems.

Keywords

School entrance, People centric, Resilient, Replicable, Time-sharing, Co-create

1. Introduction

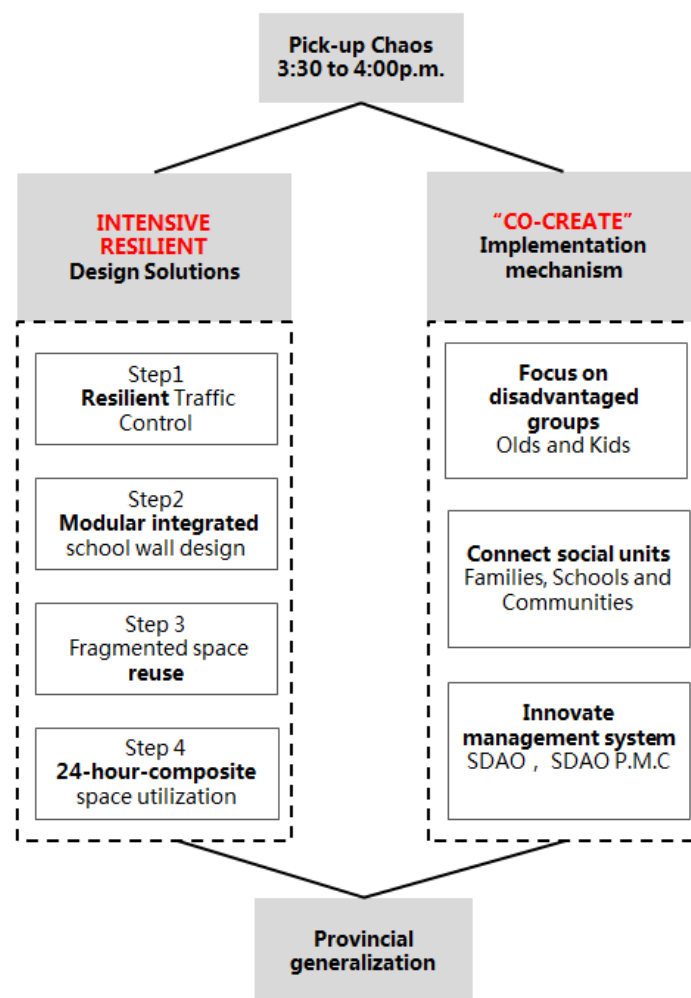
“To meet people’s desire for a better life.” is the goal for the Communist Party of China to strive forward since 2018. Under this background, in 2019, Jiangsu Provincial Department of Housing and Urban-Rural, and Provincial Department of Finance chose 5 projects as the first group of “provincial livable neighborhood projects”, “Yaofangmen provincial livable neighborhood” was one of them.

In order to propel the high quality development of Yaofangmen provincial livable neighborhood, and meanwhile fulfill people’s yearn for a better life, Yaohua sub-district administrative office of Qixia district government entrust JUP to compile <The Action Planning of Yaofangmen provincial livable neighborhood construction>, and together took a series of measures to let neighborhood residents widely and deeply take part in the construction of their own neighborhood, such as “resident interviews”, “design into schools”, “neighborhood design workshop”. All these measures aims at letting neighborhood planners understanding the residents’ real need and waking up the residents’ sense of participation. The final goal is to build the neighborhood administer mechanism of “co-construct, co-administer, co-sharing”. And “the Action Planning” was made for the sub-district administrative office (S.D.A.O) to guide and propel the neighborhood construction.

During the survey, there exposed a serious pick-up congestion and anxious problem around the school entrance of Qixia experimental primary school (Yaohelu branch school). Based on this chance of provincial livable neighborhood construction, after deeply cooperated with the sub-district administrative office and local residents, we proposed this Resilient Replicable School-Entrance Design. Through this design, firstly we try to solve the basic problem of congestion, secondly we try to turn the School-Entrance space further into a 24hr- compound-use neighbourhood micro space, and thirdly we hope to

pry up the “co-create” mode with multiparty participation in the livable neighbourhood construction and the administration process. As one of the pilot projects of the <Action Planning of Yaofangmen provincial livable neighborhood construction>, this design won the First Prize of ZIJIN AWARD CULTURAL CREATIVE DESIGN COMPETITION 2019, and has already started its construction phase at the beginning of 2020. The design solutions and implementation mechanism behind this project can be provincially promoted to a certain extent.

The remainder of this paper is structured as below. The second section is the problem posing, which introduces the basic facts of Yaofangmen provincial livable neighborhood construction and the congestion problem in front of the Qixia experimental primary school. The third section is the “Intensive and Resilient” Design Solutions, which outlines the designs on different levels to solve the pick-up anxious and finally reach the 24-hr use of entrance space. The fourth section is “Co-Create” Implementation mechanism, which introduces the participation of diverse parties during the construction and management of the livable neighborhood. Finally, a discussion about provincial generalization of this design and conclusion are offered.



Paper structure

2. Basic information of Yaofangmen livable neighborhood

2.1. Goal and Positioning

The goal and positioning of “Yaofangmen livable neighborhood planning” is to build a neighborhood that could let the residents have more sense of safety and satisfaction and happiness, and become the demonstration for the wider Jiangsu livable neighborhood construction.

2.2. Site

The site of this model neighborhood located in the southwest side of new town area of “Xinyao new town district”, east to Xinyao road, southeast to yaojin road and lin’an road, south to Yaojia road, west to Yanyao road, the planning area is 0.92 square kilometres.

2.3. Population

This model neighbourhood includes 4 communities and 12 residential areas, and the current population is 27 thousand people. The age distribution of this model neighborhood is mainly from 18 to 60 with a percentage of 76%. The Percentage of Olds over 60 is 14%, among them, the percentage of the olds in the resettlement residential area reaches 24.8%. The population aging is getting more and more seriously.

2.4 Acquaintance social network

In Xinyao new town district, based on the industrial plant area, the Danwei Compound area, the Nanjing East Railway Station, the community center area and the resettlement residential estate, there formed an acquaintance society social networking that bonded by production and living. The characteristic of the acquaintance society is also obvious in this model neighborhood: there are 13 residential estates. Among them, 6 estates are Danwei reformed residential estates, 3 estates are demolition in-situ rehousing residential estates and only 4 estates are commercial residential estates. Statistics shows that the percentage of “acquaintance estate” reaches 74%, the construction area and land area also reaches around 70%. Due to “the acquaintance estates”, there formed a harmonious community atmosphere which is quite rare in the contemporary commercial community.

Through survey, we found that next to the school entrance, there are three residential estates: “Shangtie Yuegui Garden”, “Jialing Meiju” and “Jisuan new residential quarter”. The main residents of these three quarters are old workers retired from the railway system, they shared the railway culture and collective memories of this historical area.

2.5 Current education facilities

The current educational facilities inside this model neighborhood are one primary schools and one kindergarten: Qixia experimental primary school (Yaohelu branch school) and Qixia No.1 kindergarten. These two schools are can cover part of the enrollment requirement, while there is difficulty in satisfying all the enrollment requirement from the nearby residential estates. In the periphery area of the site there distributed one primary school (Qixia experimental school), one middle school (Qixia experimental middle school) and one high school (Qixia Highschool).



Yaofangmen Livable neighborhood, area: 0.92km²

3. Problem Posing: Pick-up Anxiety from 3:30-4:00

3.1. Objective Congestion

The Qixia No.1 kindergarten is located on the north side of Yaohe west road, while the Qixia experimental primary school (Yaohelu branch school) is located on the south side of Yaohe west road, both school gates are directly opened on Yaohe West Road and very close. The width of Yaohe West road near the school entrance section is 10 meters, two ways with two lanes, and there only exist one walkway on the kindergarten site of 1.3meters.

Through investigation, the statistics shows that the currently there are 400 students in the kindergarten. The primary school plan to expand enrollment to 1500 students in 2020 and currently there are 300 year one students in the primary school. And there are around 6000 residents in the nearby "Shangtie Yuegui Garden". The Kindergarten ended at 4:00p.m., while the primary school ended around 3:30 p.m. Some parents are used to wait at the entrance early and leave the entrance slowly, which means from 3:30-4:00, there will be at least 600 students and 600 parents leaving from this narrow school entrance space on Yaohe West road. Furthermore, enrollment in nearby school is not totally realized currently, not all the students of these two schools live in this model neighborhood, especially for the primary school, there are still a large number of parents come by private vehicles.

The huge instantaneous crowd of over 1200, large number of pick-up private vehicles, the narrow road, the lack of effective traffic control and the lack of enough pick-up space near the school entrance, all these lead to the objective congestion on Yaohe west road, which undertake the daily shuttle of students. As a result, every day, before the school ended from 3:30 to 4:00 p.m., Yaohexi Road is extremely congested with cars, scooters and pick-up parents. The traffic condition is in a mess and thus formed a crowded and anxious pick-up situation in front of the schools' main gates.



3.2 Subjective Anxious

Under the Chinese intergenerational parenting culture, the grandparents usually undertake the task of picking their kids up to ensuring their safety. Under the pick-up chaos on the road, and because of their special physical and mental characteristics, the olds have severe anxious problem during the pick-up time. Through on-spot investigation, the olds expressed their urgent need for a simple sitting tool, a rain promenade, and the need to chatting with other parents during their waiting time before the school ends. On the other hand, the school's principle also shows her everyday worry about the traffic safety.

However, on this 10m-width branch road, except the carriageway, there only has an intermittent 1meter sidewalk. Under such extreme tense street space and congested traffic, to solve the pick-up anxious problem become the starting point of this design.



Site of Pick-up Anxiety



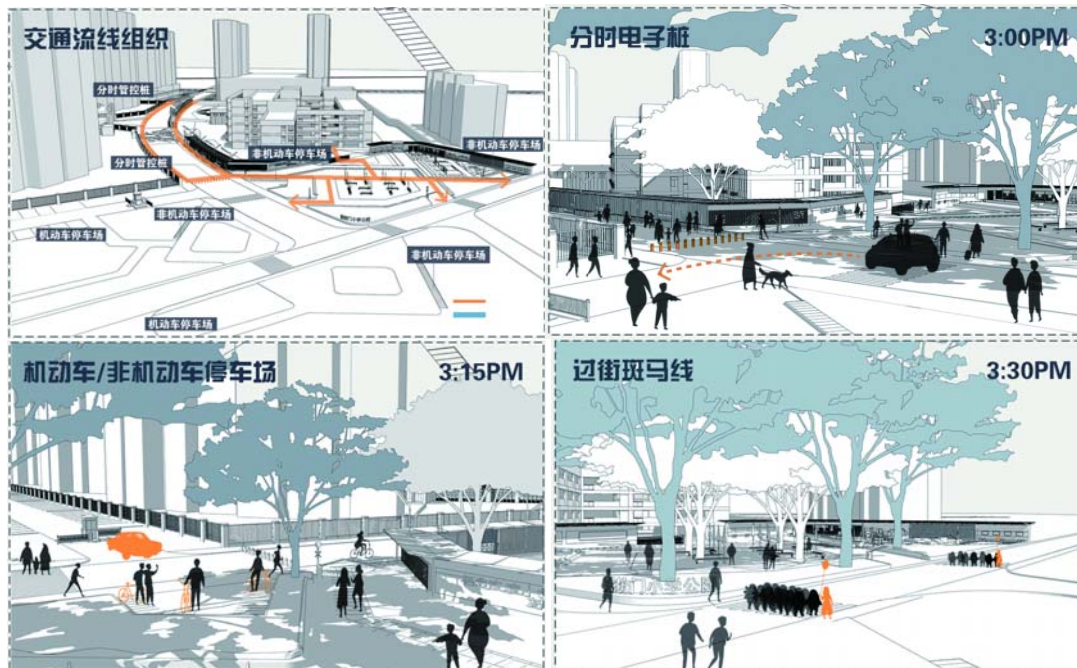
Current Pick-up Anxiety on Yaohe West Road

4. “Intensive and Resilient” Design Solutions

4.1 Set resilient traffic control

Step one is to set resilient traffic controls to dredge the congested traffic through three main approaches. Firstly, set time-sharing lifting piles on the road section includes the two school gates, so as to ensure the walking safety of the kids and olds during the pick-up time. Meanwhile, the time period of pile’s lifting need to be precisely controlled, so as to ensure the minimum effect on the urban traffic flow. Secondly, reopen the secondary gate from 3:30 to 4:00p.m, so as to diverse at least half part of the students and parents to the secondary gate to relieve the congestion inside and outside of the school. What’s more important here is, after reopen the gate, the school should well organize the teachers to arrange the students’ route from the classroom to the two gates and to guide them in the right order, and signs also should be made to guide the parents to the right gate. Thirdly, open the nearby parking lot to the public, add more parking space, especially for the pick-up parents to park and then walk to the school gate.

Among the traffic controls mentioned above, set time-sharing lifting piles and reopen the secondary school gate are two resilient approaches that can fit to almost every primary school’s layout and street environment.



Resilient traffic control solutions

4.2 Reuse the fragmented space near the school entrance

In the west side of the primary school, we captured a fragmented space currently used for material storage, which is not sufficiently used. It is assigned to be a park green space in the regulatory plan. In step 2, we proposed to turn this fragmented storage space in to a pick-up waiting space, which includes functions like waiting, distributing, communication, education and recreation.

Fragmented and unexploited space around each school is different; some might be big as an individual land use, while some might be very small as the surplus space on the street. Planners, together with S.D.A.O and the school, should together search for such available fragmented space near the school gate, delineate the usable space boundary and make suitable designs according to the space size.



Frangmented space to Pick-up Park

4.3 Modular integrated wall design near the school entrance

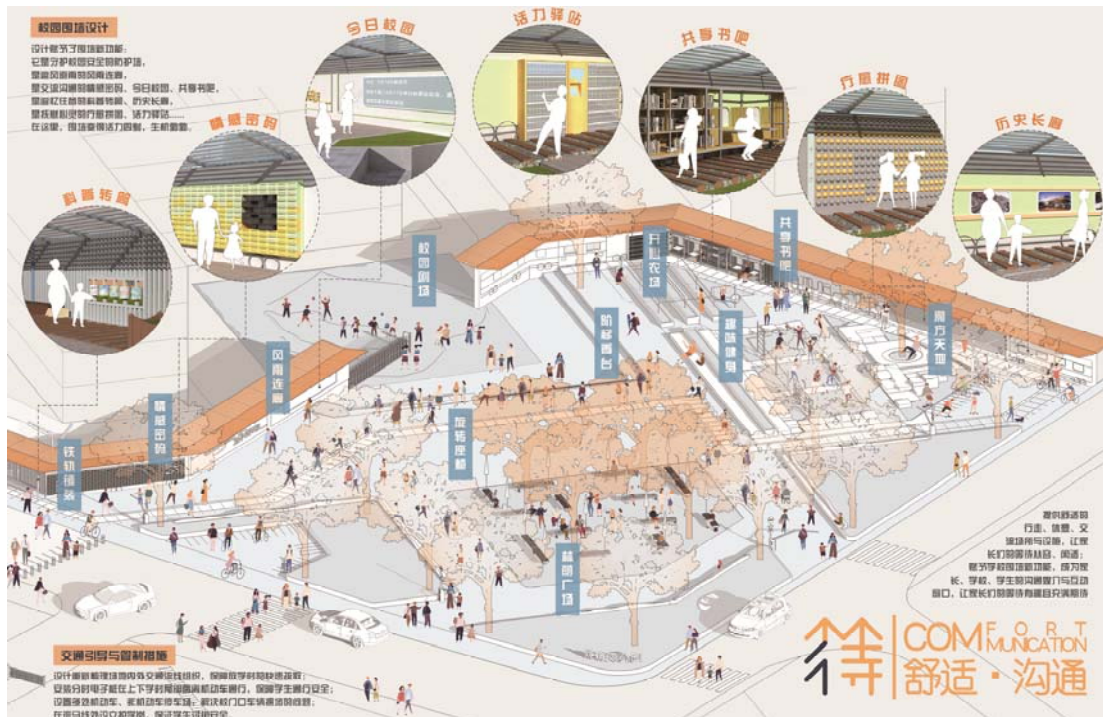
The third step is to fully make use of the walls close to the school gate intensively, to propose a modular and integrated reconstruction wall design, which is our key design solution. Directed at the users of olds and juveniles, after studied their physical and mental characteristics, we proposed various wall modules, including "retractable seats", "Rain promenade" to meet their basic physical needs; "information board", "wall library" module to meet their social and mental needs; Furthermore, "family mailbox" wall module is also designed to lever the fusion of family-school education. "Historical gallery" wall module is to recall residents' collective memory of train culture of this neighborhood.

Why choose the wall? Because on this space-limited street, as the boundary that carries the anxious waiting crowd, the school wall, can not only function as an enclosure, but also integrate various functions that accurately serve these parents and students' multi-faceted need. Meanwhile, every school has its school wall, compound wall design solution can be easily replicated and self-modified to similar schools in the provincial level.

Why on the wall? Turning the traditional horizontal layout design to this vertical wall design, the purpose is to save street space and public resource. Under nowadays' tendency of limited public resource, such intensive integrated vertical design is worth of promotion.



Why modular design? In the construction phase, modular design has the advantages of standard production, easy cost control and easy installation. More important is, modular design offers enough choices for different schools, and can resiliently adapt to different school wall conditions.



Modular integrated wall design cling to the school entrance

4.4 24-hour compound use of the school entrance space

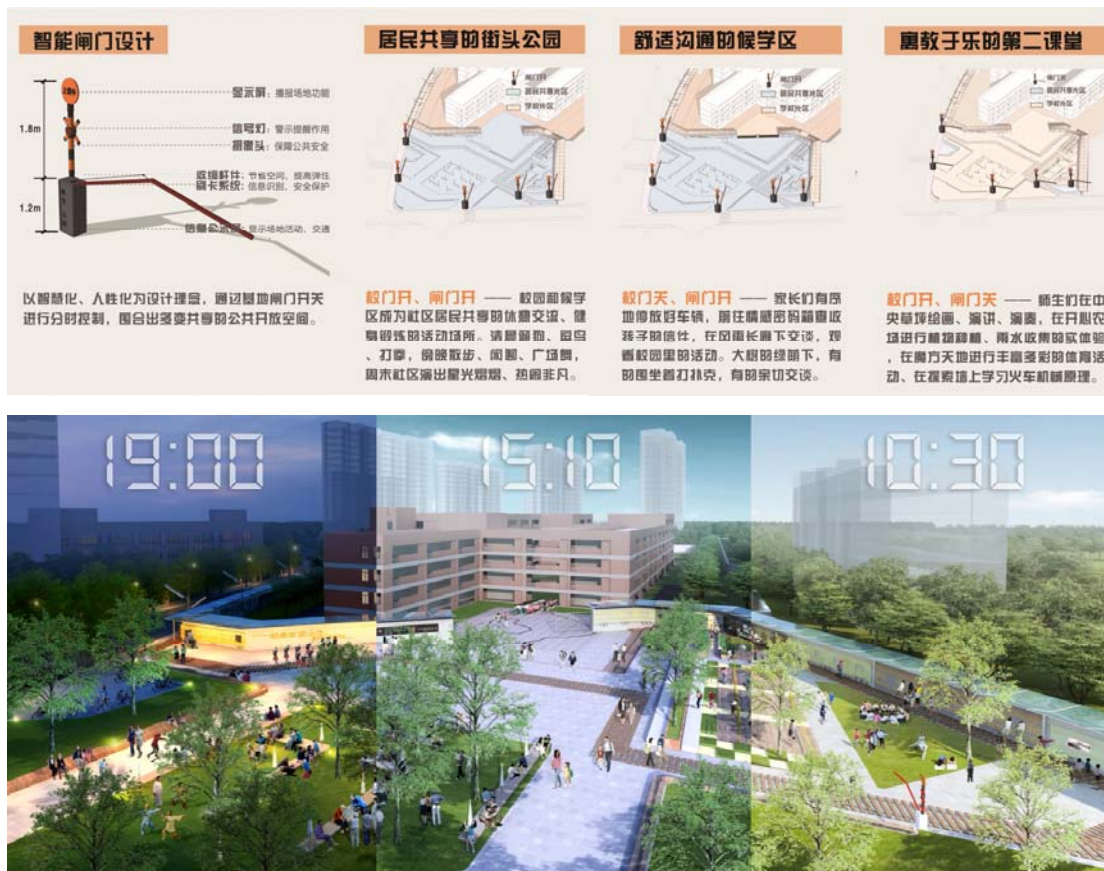
In this space-limited model neighborhood, in order to let the public space resource better serve more people, we need to consider the compound use of the public space near the school entrance on the 24 hour time line. From this point of view, this unused space on west side of the school should not only serve the pick-up crowd at 3:30, but also serve for the students during the daytime, and serve for the residents in the nearby estate during the night time after work. To realize this idea, we set dynamic gates at several entrances of this site. Through the coordinated control of the dynamic gates and the school gates, we designed three modes of the public space use: ①school time, close the dynamic gates and open the school gates, binding this site together with the public space inside the school to form an outdoor education space for the students; ②pick-up time, open the dynamic gates and close the school gates, this site will work as the waiting space for the parents; ③after work- time, open the dynamic gates and open the school gates, both public space in and out of the school gate will all open to the public, and will work as street park for the nearby residents for jogging and dancing.

Delimitate the boundary of the available public spaces in and out of the school entrance and then control the opening and closing of the school gate, according to the rules of residents' daily routines in this neighborhood. The purpose is to transfer the micro public space into "second classroom", "childhood theater", "square dance Park", so as to finally achieve the 24-hour compound use of micro space on the neighborhood level.

The size of unused fragmented space in front of each school is different, some are big, and some are small, while the public space inside the school also varied. However, through the way of time-sharing



control of the school gate and the site gate, to integrate utilize the public space in and out of the school, and to finally realize the 24-hr compound use of the community micro space, is an important idea in the construction of the liveable neighbourhood.



24-hr compound use of the pick-up park

5. “Co-Create” design implementation mechanism

5.1 Appeal the residents to participate, focus on the disadvantaged groups

Different from the traditional top-down planning mode, we invite residents to take part in the community planning process. Beside encouraging residents from different ages to express their own need, we also encourage them to express their design ideas and instruct our planning. Through organizing activities like residents’ forum, summer design workshop, and Planners in the community, we aims to make sure the design can accurately meet residents’ need, while cultivating the residents’ consciousness and ability of self-government.

On the other hand, based on the characteristic of “acquaintance society” and “aging population”, during the co-design process, we especially focus on disadvantaged groups of olds and kids, to promote the humanistic concern in the community planning.





Summer design workshop and kids' planning

5.2 Pry up plural subjects, connect social units

Take this project as a carrier, we try to give consideration to multi-parties interest, and meanwhile try to pry up multi parties to take part in actively and together promote the implementation of "the livable neighborhood construction". To reach this goal, we adopt various ways, including "Discussion with the S.D.A.O", "site survey of the schools", "questionnaire and interviews with the residents" and "community council".

We hope to take this design as a turning point, to promote the communication and fusion of neighborhood units on different levels, like the families, schools, residential areas and S.D.A.O, and to finally form the neighborhood structure of "together management and together sharing".



Multi-party participation to connect social units

5.3 Innovative red property management, long-lasting neighborhood management

Our institute formed close cooperation with the sub-district administrative office (S.D.A.O) and its subordinate property management company (P.M.C). The S.D.A.O is the leading department to implement the "livable neighborhood". To better construct the neighbourhood as a whole through various projects and to keep the long-lasting management, the S.D.A.O founded its subordinate "Yaofangmen P.M.C".

In the concrete work, the S.D.A.O first negotiates with stakeholders from different land blocks to gain the unified management right of the public space. At the same time, the Yaofangmen P.M.C, works as the intermediary to resolve conflicts, and plays the role of forming a bridge between the earlier and later stages. On one hand, the P.M.C undertakes the construction tasks assigned by the S.D.A.O, on the other hand, the P.M.C listens to the residents' real need, coordinates the contradictions in various renovation projects, and also docking with the design institutions and construction companies. Furthermore, the P.M.C keeps the long-lasting management of the public spaces after the renovation projects finished. To some extent, this P.M.C is the "versatile assistant" that helps the S.D.A.O to propel the liveable neighborhood.

The S.D.A.O, combined with its subordinate P.M.C, through this innovative management mechanism of unified public affair management right, reached the goal of coordinating the public resources, “Co-create” and “long-lasting management” of the neighborhood. This innovative management mechanism is the key in the full life cycle of the livable neighborhood from design, construction to operation.



JUP working together with Yaofangmen P.M.C

6. Provincial generalization

Such pick-up problems existed quite commonly in front of the schools in Jiangsu, take Yaofangmen provincial livable neighborhood as a model, we made efforts to offer replicable and resilient design solutions in stratification in our proposal: The resilient lifting piles and the time-sharing gate control, which is small enough to fully attach to the street and the existed fragment space, can flexibly adjust themselves according to the public space situations; The modular integrated wall design has the features of low- cost, easy-operation and free selection, which can adapt to different school's need and budget. Last but not the least, the “Co-Create” Implementation mechanism with unified public affair management right is the key to implement the resilient designs. In 2020, as a model, the renovation of the entrance area of Qixia experimental primary school has completed and already opened to the public.

This resilient and replicable design solution together with the innovative implementation mechanism, are methodologies that offered by JUP from the view of urban planners, to help solve the general social problems on the neighborhood scale.



School entrance space after renovation



“Thousands of possibilities while waiting”

7. References

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